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COMPILED BY

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and
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CONTENTS

I.—TITLES

The year of publication has been omitted where it is the same as the volume year of the "Record" (1961).

(1) Anon. Museum beim Solenhofer Aktien-Verein. pp. 32 figs. 1959.

(2) Anon. *Bufo viridis* [cover photo.] Lacerta **19** : 26.

(3) Anon. De indeling van de klasse van Amphibia volgens het natuurlijk systeem. Lacerta **19** : 82–84.

Ábrahám, A. Die Mikroskopische Innervation des Herzens der Amphibien. Acta biol., Szeged N.S. **7** (1–2) : 45–64 9 figs.

Acher, R., see Morel, F.

Adams, W. R., see Mauro, A.

Adkins, W. M. III. A study of the role of the pineal system in amphibian behaviour. Nat. Hist. N.Y. **70** (8) : 72–76 figs. (Comments by **Zweifel, R. G.**).

Adler, K. K. A survey of recent county records for the reptiles, frogs and toads of Ohio. J. Ohio herpet. Soc. **3** (2) : 5–13.

Adler, K. K. & Dennis, D. M. New herpetological records from Ohio. J. Ohio herpet. Soc. **3** (2) : 17–22.

Ahrenfeldt, R. H. Mating behaviour of *Euproctus asper* in captivity. Brit. J. Herpet. **2** 1960 : 194–197.

Albert, J. & Cambar, R. L'augmentation de la pression du liquide intra-cœlomique altère la morphogenèse de l'appareil digestif chez la larve de la Grenouille agile (*Rana dalmatina* Bon.). C.R. Acad. Sci. Paris **253** : 190–192.

Alcala, A. C., see Brown, W. C.

Alexa, E. & Boingeanu, A. L'étude radiologique de la circulation dans la ventricule de la grenouille *Rana ridibunda* par l'utilisation de substances de contraste. An. St. Univ. Iasi. N.S. Sect. II St. nat. **7** : 27–34 2 pls.

Alexa, F., see Jitariu, P.

Alexandre, Rev. Father. Nos salamandres. Carnets de Zool. **20** (1) 1960 : 25–32 4 figs.

Allen, R., see Neill, W. T.

Allin, A. E. The central newt in Thunder Bay and Rainy River districts, Ontario. Can. Fld Nat. **75** : 166–167.

Allison, H. J., see Camp, C. L.

Almaça, C. Anfíbios portugueses—Apontamentos sobre a sua sistemática e ecologia. Naturalia **8** (1–2) : 47–52.

Alston, R. E., see Hunsaker, D.

Alvarado, R. H. & Kirschner, L. B. Factors influencing sodium balance in the tiger salamander, *Ambystoma tigrinum*. Amer. Zool. **1** : 338. [Abst.]

Amano, H. Le rôle de l'entoblaste dans la formation du cœur chez l'urodèle. C.R. Soc. Biol. Paris **155** : 2218.

Amano, H., see Fautrez, J.

Amanuma, A. Effects of androgenic hormone on the development of gonads of *Hynobius nebulosus*. J. Biol. Osaka City Univ. **12** : 9–13 1 pl.

Amenta, P. S. Fusion of nucleoli in cells cultured from the heart of *Triturus viridescens*. Anat. Rec. **139** : 155–165 23 figs.

(1) Anderson, J. D. The courtship behavior of *Ambystoma macrodactylum croceum*. Copeia **1961** : 132–139 2 figs.

(2) Anderson, J. D. The life history and systematics of *Ambystoma rosaceum*. Copeia **1961** : 371–377 2 figs.

Anderson, S. C., see Leviton, A. E.

Andersson-Cedergren, E., see Muscatello, U.

(1) Anderton, L. G. Experimental morphogenesis of adrenal glands. ASB Bull. **6** 1959 : 20. [Abst.]

(2) Anderton, L. G. An experimental analysis of factors affecting the development of adrenal glands with special reference to *Amblystoma punctatum*. J. Elisha Mitchell sci. Soc. **77** : 151–163 14 figs.

Angelier, E. Les lacs de L'Estibère : remarques sur le peuplement des lacs de montagne. Bull. Soc. Hist. nat. Toulouse **96** : 7–14.

Anton, H. J. Zur Frage der Aktivierung der Gewebe in Extremitätenstumpf bei Urodelen vor der Blastembildung. Roux Arch. Entw. Mech. Organ. **153** : 363–369 3 figs.

(1) Aplington, H. W. Cellular changes in the pituitary of *Necturus* following thyroidectomy. Anat. Rec. **139** : 292. [Abst.]

(2) Aplington, H. W. Thyroidectomy cells of *Necturus* hypophysis. Amer. Zool. **1** : 433. [Abst.]

Armstrong, N. E., see Hubbs C.

Asai, O., see Iwasawa, H.

Asandei, A., see Mihail, N.

Asano, K., see Hanzawa, S.

Asayama, S.-I. Potency of lateral plate mesoderm relating to the formation of reproductive tissue. Zool. Mag. Tokyo **70** : 289–293 2 figs. [In Japanese, English summary.]

Astrada, J. J. Influence du pH et des toxiques sur l'imbibition et la spermiation du testicule de Crapaud. C.R. Soc. Biol. Paris **154** : 2381.

Astrada, J. J. & Caligaris, L. S. de. Effet de quelques enzymes et du pH sur l'action gonadotrophique de quelques hormones hypophysaires. C.R. Soc. Biol. Paris **155** : 158.

(1) Auclair, W. Cultivation of monolayer cultures of frog renal cells. Nature, Lond. **192** : 467–468.

(2) Auclair, W. Monolayer cultures of *Rana pipiens* kidney cells. Amer. Zool. **1** : 339. [Abst.]

(3) Auclair, W. Natural incidence of renal adenocarcinoma in Vermont *Rana pipiens*. Amer. Zool. **1** : 434. [Abst.]

(1) Audretsch, I. F. C. d'. Aantekeningen over amphibiën en reptielen in Suriname. Lacerta **19** : 51–55 4 photos.

(2) Audretsch, I. F. C. d'. Aantekeningen over amphibien en reptielen in Suriname (II). Lacerta **19** : 78–81 3 photos.

Auffenberg, W. A new genus of fossil salamander from North America. Amer. midl. Nat. **66** : 456–465 5 figs.

Avarguès, M. Action de l'adrénaline sur la consommation d'oxygène chez le Discoglosse (*Discoglossus pictus* Otth.). C.R. Soc. Biol. Paris **155** : 732–735.

Azzone, G. F., see Muscatello, U.

Baarslag, A. F. Enige Amerikaanse Terrariumdieren. Lacerta **19** : 89–90 photo. [English summary.]

(1) Baffoni, G. M. L'andamento dell'attività mitotica nel midollo spinale di un Anfibio urodelo durante lo sviluppo. R.C. Accad. Lincei (8) **30** : 802–808 1 fig.

(2) Baffoni, G. M. L'andamento dell'attività mitotica nel mielincefalo durante lo sviluppo di un Anfibio urodelo. R.C. Accad. Lincei (8) **30** : 954–959 1 fig.

(3) Baffoni, G. M. L'andamento dell'attività mitotica nel mesencefalo di un Anfibio durante lo sviluppo. R.A. Accad. Lincei (8) **31** : 86–91 1 fig.

(4) Baffoni, G. M. L'andamento dell'attività proliferativa nel proencefalo durante lo sviluppo di un Anfibio urodelo. R.C. Accad. Lincei (8) **31** : 158–164 1 fig.

(1) Bagnara, J. T. The pineal gland and body lightening in *Xenopus* larvae. Anat. Rec. **139** : 204. [Abst.]

(2) Bagnara, J. T. Onset of pineal and hypophyseal regulation of melanophores in *Xenopus*. Amer. Zool. **1** : 339–340. [Abst.]

(3) Bagnara, J. T. Stimulation of guanophores and melanophores by MSH peptides. Amer. Zool. **1** : 435. [Abst.]

(1) Baker, C. L. Spermatozoa of *Amphiuma tridactylum* : morphology, helical motility and reversibility. Amer. Zool. **1** : 340. [Abst.]

(2) Baker, C. L. Spermateleosis in *Amphiuma tridactylum*. Amer. Zool. **1** : 435. [Abst.]

Baker, J. K. Distribution of and key to the neotenic *Eurycea* of Texas. Sthwest. Nat. **6** : 27–32 1 fig.

Baldwin, E., see Balinsky, J. B.

Balinsky, B. I. Ultrastructural mechanisms of gastrulation and neurulation. Inst. Intern. d'Embryol. Pavia, Symposium on Germ Cells and Development : 550–563 12 figs.

Balinsky, J. B. & Baldwin, E. The mode of excretion of ammonia and urea in *Xenopus laevis*. J. exp. Biol. **38** : 695–705 2 figs.

Banik, U. K. The use of the common Indian male toad *Bufo melanostictus* Schneider, for the assay of human chorionic gonadotrophin. Ann. Biochem. exp. Med. **20** 1960 : 165–170 1 fig.

(1) Banta, B. H. The use of clothes moth larvae (Lepidoptera : Tineidae) to prepare osteological specimens, with an annotated bibliography on the use of other arthropods for vertebrate skeletal preparation. Wasmann J. Biol. **19** : 265–268.

(2) Banta, B. H. On the occurrence of *Hyla regilla* in the Lower Colorado River, Clark County, Nevada. Herpetologia **17** : 106–108.

Barch, S. H. Serological analysis of Lucké renal adenocarcinoma. Amer. Zool. **1** : 341. [Abst.]

Barr, T. C. Caves of Tennessee. Bull. geol. Surv. Tenn. **64** : vii+567 1 pl. figs.

Barth, L. G. & Barth, L. J. Further investigations of the differentiation *in vitro* of presumptive epidermis cells of the *Rana pipiens* gastrula. Amer. Zool. **1** : 436. [Abst.]

Barth, L. J., see Barth, L. G.

Bartha, T., Faiszt, J. & Jendrassik, L. Die Wirkung des Froschhautsekrets auf den Muskel. Ann. Univ. Sci. budapest. (Sect. Biol.) **4** : 9–20 4 figs.

Barton, A. J. & MacCallum, H. R. A new record size for the Black Mountain dusky salamander *Desmognathus fuscus welteri*. Herpetologia **17** : 64.

Bartone, J. C. Application of the Streeter developmental horizons for the classification of chick, frog and pig embryos in teaching and research. Trans. Amer. micr. Soc. **79** 1960 : 253–256.

Barwick, R. E. Illustrations of the New Zealand frog fauna. Tuatara **8** (3) : 95–98 6 figs.

Basu, S. L. A study of the urinogenital system of male American wood frog, *Rana sylvatica*. Proc. zool. Soc., Calcutta **13** 1960 [1961] : 39–42 1 fig.

(1) Basu, S. L. & Mondal, A. Spermatogenesis in normal hypophysectomized toads (*Bufo melanostictus*) following pituitary extract administration. Naturwissenschaften **48** : 739–740.

(2) Basu, S. L. & Mondal, A. The normal spermatogenetic cycle of the common Indian frog, *Rana tigrina* Daud. Folia biol. Krakow **9** : 135–142 1 pl. 1 fig.

Basu, S. L., see van Oordt, P. G. W. J.

Baylor, E. R. & Stuart, L. C. A new race of *Bufo valliceps* from Guatemala. Proc. biol. Soc. Wash. **74 :** 195–202 2 figs.

Becker, R. O. Search for evidence of axial current flow in peripheral nerves of salamander. Science **134 :** 101–102 2 figs.

Beetschen, J.-C. & Jaylet, A. Le caryotype somatique de l'Amphibien Urodèle *Pleurodeles waltlii* Michah. C.R. Acad. Sci. Paris **253 :** 3055–3057.

Bellis, E. D. Growth of the wood frog, *Rana sylvatica*. Copeia **1961 :** 74–77 1 fig.

Belton, P. & Grundfest, H. The ionic factors in the electrogenesis of the electrically inexcitable and electrically excitable membrane components of frog slow muscle fibres. Biol. Bull., Woods Hole **121 :** 382. [Abst.]

Benton, A. H. & Smiley, D. Some noteworthy records from eastern New York. Herpetologica **17 :** 142.

Bertini, F. Observaciones comparativas sobre el metabolismo del amarillo de manteca (p-dimetilamino-azobenceno) en *Bufo arenarum* H. Metabolitos colorantes en sangre. Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 3–7 2 figs.

Bertini, F. & Cei, J. M. Electroferogramas de proteínas séricas en el género *Bufo*. Actas Trab. I Congr. sudamer. Zool. 1959 **4** 1960 [1961] : 161–172 2 figs.

Bertini, F., see Cei, J. M.

Bertolini, B. Osservazioni istochimiche sulla distribuzione della fosfatasi acida rigenerazione del midollo spinale caudale del Tritone. R.C. Accad. Lincei (8) **30 :** 943–947 1 pl.

Bertolini, B. & Moretti, M. T. Localizzazione della fosfatasi acida nella muscolatura e nei tessuti connettivali della coda rigenerante del Tritone. R.C. Accad. Lincei (8) **31 :** 172–175 1 pl.

Beškov, V. A. Beitrag zur zoogeographischen Untersuchung der Herpetofauna in Bulgarien. Izv. zool. Inst. bulg. Akad. Nauk **10 :** 373–380. [In Russian, German summary.]

Bierbauer, J., see Csaba, G.

Blackler, A. W. & Fischberg, M. Transfer of primordial germ-cells in *Xenopus laevis*. J. Embryol. exp. Morph. **9 :** 634–641 2 figs. 2 pls.

Blair, A. P. Metamorphosis of *Pseudotriton pallucus* with iodine. Copeia **1961 :** 499.

Blair, A. P. & Lindsay, H. L., Jr. *Hyla avivoca* (Hylidae) in Oklahoma. Sthwest. Nat. **6 :** 202.

(1) Blair, W. F. Effects of radiations on natural populations of vertebrates. *In* Radio-ecology section 12 : 1377–1381. Reprinted from : Recent Advances in Botany [Univ. Toronto Press], Canada.

(2) Blair, W. F. Calling and spawning seasons in a mixed population of anurans. Ecology **42 :** 99–110 3 figs.

(3) Blair, W. F. Further evidence bearing on intergroup and intragroup genetic compatibility in toads (genus *Bufo*). Tex. J. Sci. **13 :** 163–175.

Blair, W. F., see Hunsaker, D.

Bleakney, J. S., see Cook, F. R.

Bodemer, C. W. Effects of micro-quantities of ribonuclease infused into regenerating limbs of adult *Triturus viridescens*. Anat. Rec. **139 :** 295. [Abst.]

Bodin, J. Reptiles et batraciens de Grande-Brière. Bull. Soc. Sci. nat. Ouest **53** 1959 : 19–23.

Bogert, C. M. Die Amphibien und Reptilien europas. By R. Mertens & H. Wermuth. Frankfurt am Main (Verlag Waldemar Kramer) 1960 (Review). Copeia **1961 :** 252–256.

Boingeanu, A., see Alexa, E.

Boitkevich, A. A. Neurosecretory process during metamorphosis of anurans. Dokl. Akad. Nauk SSSR **135** 1960 : 221–224. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **135 :** 958–961 1 fig.]

(1) Bonet, F. A. M. de. Epuration plasmatique du rein isolé de *Bufo arenarum*. C.R. Soc. Biol. Paris **155 :** 177–178.

(2) Bonet, F. A. M. de. Action de la pitressine et de la syntocine sur le rein isolé du Crapaud. C.R. Soc. Biol. Paris **155 :** 408.

Bonhomme, C., see Dollander, A.

Bons, J. Aperçu sur le peuplement herpétologique du Maroc oriental. Bull. Soc. Sci. nat. Maroc **40** (1) 1960 [1961] : 53–75 4 pls. 2 figs.

Borovyagin, V. L. Myelinization of the peripheral nervous system in Amphibia. Dokl. Akad. Nauk SSSR **133** 1960 : 214–217. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **133 :** 557–560 2 figs.]

Borsuk, R. A. & Popov, V. V. Influence of some regimens of illumination on the Wolffian regeneration of the crystalline lens of the Spanish triton. Dokl. Akad. Nauk SSSR **139 :** 1487–1490. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **139 :** 613–617 4 figs.]

Boschwitz, D. The parathyroid glands of *Bufo viridis* Laurenti. Herpetologica **17 :** 192–199 5 figs.

(1) Bounhiol, J.-J. & Disclos, G. Emploi d'un neuroplégique pour retarder la métamorphose du Crapaud accoucheur (*Alytes obstetricans* Laur.). C.R. Ass. franç. Adv. Sci. **78 :** 47. [Abst.] [*See also* same paper pp. 56–57.]

(2) Bounhiol, J.-J. & Disclos, G. Existence d'une pause automnale de la morphogenèse avec réactivité réduite à la thyroxine chez les têtards du Crapaud accoucheur. C.R. Ass. franç. Adv. Sci. **78 :** 47–48.

Bounhiol, J.-J. & Rémy, C. Étude topographique de l'encéphale et de ses cavités chez le têtard normal et chez le têtard thyroxiné du Crapaud accoucheur (*Alytes obstetricans* Laur.). C.R. Assoc. Anat. No. 106 1960 : 124–133 17 figs.

Bounhiol, J.-J., see Disclos, P.

Bovbjerg, A. M. & Kollross, J. J. Development of the skin glands in the frog, *Rana pipiens*, during treatment with thyroxine. Amer. Zool. **1** : 438–439. [Abst.]

Boyd, J. D., Johnson, F. R. & Lever, J. D. Electron microscopy in anatomy. London (Edward Arnold) : pp. viii+288 text-illust. [For papers on amphibians *see* Muir, A. R., and Peters, A.]

Brachet, J. Morphogenetic effects of lipoic acid on amphibian embryos. Nature, Lond. **189** : 156–157 2 figs.

Brachet, J., Cape, M., Decroly, M., Quertier, I. & Six, N. Étude des effets biochimiques du β-mercaptoéthanol sur les œufs de batraciens. Developmental Biol. **3** : 424–443 tables. [English summary.]

Brachet, J., see Limbosch-Rolin, S.

Bradt, C., see Subtelny, S.

(1) **Bragg, A. N.** A theory of the origin of spadefooted toads deduced principally by a study of their habits. Anim. Behav. **9** : 178–186.

(2) **Bragg, A. N.** The behaviour and comparative developmental rates in nature of tadpoles of a spadefoot, a toad, and a frog. Herpetologica **17** : 80–84.

(1) **Brame, A.** Summer surface activity in certain California salamanders. Bull. Pa. herpet. Soc. **7** (3) 1959 : [3].

(2) **Brame, A.** Salamander collecting in Costa Rica. Bull. Pa. herpet. Soc. **7** (5) 1959 : 12–14.

Brame, A. H., Jr., see Tanner, W. W.

(1) **Brandon, R. A.** The eyes of *Typhlotriton spelaeus*, the grotto salamander. Cave Notes **3** : 36. [Abst.]

(2) **Brandon, R. A.** A comparison of the larvae of five northeastern species of *Ambystoma* (Amphibia, Caudata). Copeia **1961** : 377–383 2 figs.

Brandon, R. A., see Huheey, J. E.

Bravo, M. C. & Fernandez de Molina, A. Frog's spinal cord potentials generated by stimulation of cutaneous nerves. J. Physiol. **155** : 86–97 6 figs.

Brecht, K., see Pauschinger, P.

Breckenbridge, W. J. & Tester, J. R. Growth, local movements and hibernation of the Manitoba toad, *Bufo hemiophrys*. Ecology **42** : 637–646 10 figs.

Bree, P. J. H. van. Note sur les amphibiens et reptiles de la Massane. Vie et Milieu **12** : 380.

Bride, M., see Jullien, A.

Briegleb, W. Die Spermatophore des Grottenolms. Zool. Anz. **166** : 87–91 3 figs.

Briggs, R., Signoret, J. & Humphrey, R. R. Transplantation of genetically marked nuclei in the axolotl. Amer. Zool. **1** : 346. [Abst.]

Brocas, J. & Verzár, F. The ageing of *Xenopus laevis*. Experientia **17** : 421.

Brode, W. E. Observations on the development of *Desmognathus* eggs under relatively dry conditions. Herpetologica **17** : 202–203.

Brouant, J.-F., see Dollander, A.

Brown, W. C. & Alcala, A. C. Populations of amphibians and reptiles in the submontane and montane forests of Cuernos de Negros, Philippine Islands. Ecology **42** : 628–636 3 figs.

Bruggen, A. C. van. The Chirinda forest, Mount Selinda, a montane rain forest in Southern Rhodesia. K. fysiogr. Sällsk. Lund Forh. **31** : 61–75 4 figs.

Brunst, V. V. Some problems of regeneration. Quart. Rev. Biol. **36** : 178–206 23 figs.

Buchthal, F., see Carlsen, F.

Bur, G. E., see Trivelloni, J. C.

Burt, W. H. Some effects of Volcán Parícutin on vertebrates. Occ. Pap. Mus. Zool. Univ. Mich. No. 620 : 1–24.

Bush, F. M. Seasonal changes in the quantity of fat and glycogen of *Bufo fowleri*. ASB Bull. **8** : 26. [Abst.]

Bustard, R. Arum lily frogs and the American toad. Aquarist & Pondkpr. **25** : 232–233 3 figs.

Buttrey, B. W., see Camara, J.

Caligaris, L. S. de, see Astrada, J. J.

Callan, H. G., see Gall, J. G.

Camara, J. & Buttrey, B. W. Intestinal Protozoa from tadpoles and adults of the mink frog, *Rana septentrionalis* Baird. Proc. S. Dak. Acad. Sci. **40** : 59–66.

Cambar, R. Caractérisation d'un stade particulier (dit " stade critique ") marquant le début de la période larvaire du développement, chez les Amphibiens anoures. C.R. Ass. franç. Adv. Sci. **78** : 52. [Abst.]

Cambar, R. & Martin, S. Table chronologique du développement embryonnaire et larvaire du Crapaud accoucheur (*Alytes obstetricans* Laur.). C.R. Ass. franç. Adv. Sci. **78** : 52. [Abst.]

Cambar, R., see Albert, J.

Cambar, R., see Dechambe, C.

Cambar, R., see Gipouloux, J.-D.

Camp, C. L. & Allison, H. J. Bibliography of fossil vertebrates 1949–1953. Mem. geol. Soc. Amer. **84** : 1–532.

Campbell, A. D., Seward, W. D., Gilmer, T. E., Jr. & Huf, E. G. Automatic recording of electric potential and ion transport in frog skin. Protoplasma **54** : 163–172 8 figs.

Candelas, G. C., Ortiz, E., Vásquez, C. & Félix, L. Respiratory metabolism in tadpoles of *Leptodactylus albilabris*. Amer. Zool. **1** : 348. [Abst.]

(1) **Capanna, E.** Sulla istologia del tetto ottico di un Anfibio anuro (*Rana esculenta* L.). R.A. Accad. Lincei (8) **30** : 292–296 1 pl. 1 fig.

(2) Capanna, E. L'istologia dei Primordî palliali degli Anfibî anuri. Nota I. L'area dorso-laterale del Rospo. R.A. Accad. Lincei (8) **31** : 498–503 1 pl. 2 figs.

Cape, M., see Brachet, J.

Capellaro, D. F., Kapany, N. S. & Long, C. A hypodermic probe using fibre optics. Nature, Lond. **191** : 927–928 3 figs.

Capmourteres, E., see Taleisnik, S.

Caravita, S., see Muzii, E.

Cardell, R. R. Observations on the structure and ultrastructure of the pituitary gland of the salamander (*Triturus viridescens*). ASB Bull. **8** : 27. [Abst.]

Cardot, J., see Jullien, A.

Carl, G. C. Amphibian migration. Victoria Nat. **18** : 36.

Carlsen, F., Knappeis, G. G. & Buchthal, F. Ultrastructure of the resting and contracted striated muscle fibre at different degrees of stretch. J. biophys. biochem. Cytol. **11** : 95–117 11 figs.

Carmen Chiaraviglio, E. del, see Chiaraviglio, E. del C.

Carr, A. & Goin, C. J. Guide to the reptiles, amphibians and fresh-water fishes of Florida (Re-issue). Gainesville (University of Florida Press) 1959 pp. viii+341 text-illust.

(1) Casamiquela, R. M. Datos preliminares sobre un pipoideo fósil de Patagonia. Actas Trab. I Congr. sudamer. Zool. 1959 **4** 1960 [1961] : 17–22 1 fig.

(2) Casamiquela, R. M. Nuevos materiales de *Notobatrachus degiustoi* Reig la significacion del Anuro Jurasico Paragonico. Rev. Mus. La Plata N.S. paleont. **4** No. 21 : 35–69 3 pls. figs.

Castillo, J. del & Sanchez, V. The electrical activity of the amphibian lymph heart. J. cell. comp. Physiol. **57** : 29–45 14 figs.

Čehovič, G. Contribution à l'étude de l'action de l'hormone mélanophorique (intermédine) sur la fonction thyroïdienne de la Grenouille (*Rana esculenta*). C.R. Acad. Sci.. Paris **250** 1960 : 1114–1116 2 figs.

(1) Cei, J. M. Hallazgos hepetológicos y ampliación de la distribución geográfica de las especies Argentinas. Actas Trab. I Congr. sudamer. Zool. 1959 **1** 1960 [1961] : 209–210.

(2) Cei, J. M. Una clave para las especies chilenas del género *Eupsophus*. Actas Trab. I Congr. sudamer. Zool. 1959 **4** 1960 [1961] : 23–28 2 figs.

(3) Cei, J. M. Estructura génica de poblaciones aisladas y variación morfológica de *Lepidobatrachus asper*. Actas Trab. I Congr. sudamer. Zool. 1959 **4** 1960 [1961] : 173–181 3 figs.

(4) Cei, J. M. La batracofauna chilena : muestra de procesos evolutivos. Actas Trab. I Congr. sudamer. Zool. 1959 **4** 1960 [1961] : 183–187.

(5) Cei, J. M. *Bufo arunco* (Molina) y las formas chilenas de *Bufo spinulosus* Wiegmann. Invest. zool. chil. **7** : 59–81 5 figs. 5 pls.

(1) Cei, J. M. & Bertini, F. Diferencias entre *Leptodactylus ocellatus* y *Leptodactylus chaquensis* reveladas por vía electroforética en suero. Actas Trab. I Congr. sudamer. Zool. 1959 **4** 1960 [1961] : 189–194 1 fig.

(2) Cei, J. M. & Bertini, F. Serum proteins in allopatric and sympatric populations of *Leptodactylus ocellatus* and *L. chaquensis*. Copeia **1961** : 336–340 2 figs.

Cei, J. M. & Roig, V. G. Batracios recolectados por la expedición biológica "Erspamer" en Corrientes [a la Mesopotamia Argentina] y selva oriental de Misiones. Notas. biol. Fac. Cienc. Corrientes (Zool.) No. 1 : 1–40 7 figs.

Cei, J. M., see Bertini, F.

Certain, P. Organogenèse des formations interrénales chez le batracien urodèle *Pleurodeles waltlii* Michah. Bull. biol. **95** : 134–149 2 pls.

Chaline, J. Restes de Batraciens et de Reptiles dans des sables burdigaliens remaniés de Chilleurs-aux-Bois (Loirèt). Bull. sci. Bourgogne **20** : 125–128 2 figs.

Chalyshev, V. C. A find of Triassic fishes and stegocephalians in the northern Priural. Dokl. Akad. Nauk SSSR (Earth Sciences) **136** : 904–906. [In Russian.]

Chamberlain, J. L. Representative Chordates : a manual for comparative anatomy, by C. K. Weichert. 2nd edit. (McGraw-Hill Book Co. Inc.) 1960 : 1–218 illust. (Review). AIBS Bull. **11** (3) : 30.

Chaney, A. H. A comparison of Louisiana and Arkansas populations of *Desmognathus fuscus*. Diss. Abstr. **20** 1959 : 417.

Chaudonneret, J., see Husson, R.

Chauvet, J., see Morel, F.

Chebataroff, J. Los mares de piedra de Mal Abrigo, coma refugios faunísticos en la penillanura cristalina Uruguaya. Actas Trab. I Congr. sudamer. Zool. 1959 **1** 1960 [1961] : 69–78 3 figs.

Chen, P. S. & Zeller, Ch. Changes in DNA and RNA during embryonic development of the merogonic combination *Triton palmatus* (♀) and *Triton cristatus* (♂). Experientia **17** : 177–178.

Cheng, T. C., see Jones, A. W.

Cherian, A. G., Vasu, B. S. & Krishnaswamy, S. A note on the haemoglobin content and sedimentation rate in blood of frog. Zool. Anz. **167** : 163–166.

Chevalier, J. M., see Stahl, A.

Chew, R. M. Water metabolism of desert-inhabiting vertebrates. Biol. Rev. **36** (1) : 1–31 2 figs.

Chiakulas, J. J. & Scheving, L. E. The cyclic nature and magnitude of cell division in gastric mucosa of urodele larvae reared in the pond and laboratory. Biol. Bull., Woods Hole **120** : 1–7 3 figs.

Chiakulas, J. J., see Scheving, L. E.

(1) Chiaraviglio, E. del C. Elimination et rétention hydrique chez *Bufo arenarum* Hensel hypophysectomisé. C.R. Soc. Biol. Paris **155** : 150. [*See also* Rev. Soc. Argent. Biol. **36** 1960 : 101–107.]

(2) Chiaraviglio, E. del C. Action de l'hypophysectomie sur l'absorption cutanée d'eau et la volémie du Crapaud. C.R. Soc. Biol. Paris **155** : 405–406.

Chiaraviglio, E., see Madoery de Bonet, F. A.

Chibon, P. Développement au laboratoire d'*Eleutherodactylus martinicensis* Tschudi, batracien anoure à développement direct. Bull. Soc. zool. Fr. **85** 1960 [1961] : 412–418.

Chieffi, G. & Lupo, C. Identificazione degli ormoni steroidi nei testicoli e negli organi di Bidder di *Bufo vulgaris*. R.C. Accad. Lincei (8) **30** : 399–402.

Choi, J. K. Light and electron microscopy of toad urinary bladder. Anat. Rec. **139** : 214–215. [Abst.]

Chrapliwy, P. S. & Malnate, E. V. The systematic status of the spadefoot toad *Spea laticeps* Cope. Tex. J. Sci. **13** : 160–162.

Chrapliwy, P. S., Williams, K. & Smith, H. M. Noteworthy records of amphibians from Mexico. Herpetologica **17** : 85–90.

Christensen, A. K. The fine structure of the functional pronephros of *Ambystoma* larvae. Anat. Rec. **139** : 215. [Abst.]

Christiansen, J. L. A survey of reptiles and amphibians of Buena Vista County, Iowa. Proc. Iowa Acad. Sci. **68** : 625–634.

(1) Church, G. Auxetic growth in the Javanese toad, *Bufo melanostictus*. Science **133** : 2012–2014 2 figs.

(2) Church, G. Seasonal and lunar variation in the numbers of mating toads in Bandung (Java). Herpetologica **17** : 122–126 1 fig.

Cintron, C. & Kelly, D. E. An analysis of pineal regeneration in developing newts. Amer. Zool. **1** : 441. [Abst.]

Citterio, P., see Ranzi, S.

Cloete, S. E. The cranial morphology of *Rhyacotriton olympicus olympicus* (Gaige). Ann. Univ. Stellenbosch **36A** : 113–145 13 figs.

(1) Cochran, D. M. Type specimens of reptiles and amphibians in the United States National Museum. Bull. U.S. nat. Mus. No. 220 : 1–291.

(2) Cochran, D. M. Living amphibians of the world. London (Hamish Hamilton) pp. 199 col. text. illust.

Cochran, D. M. & Goin, C. J. A new genus and species of frog (Leptodactylidae) from Colombia. Fieldiana (Zool.) **39** : 543–546 1 fig.

Cogger, H. G. *Mixophyes fasciolatus* [cover photo.]. Aust. Mus. Mag. **13** (11) : [cover].

Cohen, P. P., see Paik, W. K.

Cole, B. T. The effect of sodium fluoroacetate on blood glucose levels in the bullfrog (*Rana catesbeiana*). ASB Bull. **6** 1959 : 23. [Abst.]

Cole, B. T., see Wilson, B.

Coleman, J. R. Deoxyribonucleases in embryonic and adult *Rana pipiens*. Amer. Zool. **1** : 348–349. [Abst.]

Collenot, A. Inversion expérimentale du sexe chez les mâles génétiques de l'Urodèle *Pleurodeles waltlii* Michah par le diéthylstilboestrol. C.R. Acad. Sci. Paris **253** : 2603–2605.

Collette, B. B. & Gehlbach, F. R. The salamander *Siren intermedia intermedia* Leconte in North Carolina. Herpetologica **17** : 203–204.

Collins, J. T. & Haggard, D. Herpetological records from Hamilton County, Ohio. J. Ohio herpet. Soc. **3** (1) : 3–4.

Collins, J. T., see Hirschfeld, C. J.

Connor, R. S., see Donahue, J. K.

Connor, R. S., see Manner, H. W.

Cook, F. R. & Bleakney, J. S. Red phase of the red-backed salamander from New Brunswick. Can. Fld. Nat. **75** : 53.

Coope, G. R., Shotton, F. W. & Strachan, I. A late Pleistocene fauna and flora from Upton Warren, Worcestershire. Phil. Trans. **244B** (714) : 379–417 16 figs.

Copland, S. J. A new name for *Hyla pearsoni*, preoccupied (Amphibia). Proc. Linn. Soc. N.S.W. **86** (1) : 168.

Cornelissen, T. Hoornpadden. Aquarium, Den Haag **32** (3) : 62–66 6 figs.

Correia, J. C. & Gallera, J. Pouvoir inducteur des greffons chordaux et parachordaux chez l'embryon de Triton. C.R. Soc. Biol. Paris **154** 1960 [1961] : 2014–2016.

Cortelyou, J. R. The effects of commercially prepared parathormone on calcium and phosphorus levels in unoperated *Rana pipiens*. Anat. Rec. **138** 1960 : 341. [Abst.]

Cortelyou, J. R., Hibner-Owerko, A. & Mulroy, J. Blood and urine calcium changes in totally parathyroidectomized *Rana pipiens*. Endocrinology **66** 1960 : 441–450 10 figs.

Coudron, J. Le remplacement des dents chez *Stenotosaurus* capitosauridé triasique (Gour Laoud, Sahara). C.R. Acad. Sci. Paris **252** : 3319–3320.

Csaba, G., Bierbauer, J. & Törö, I. Die Wirkung eines heparinbindenden Mittels (Toluidinblau) auf die Extremitätenregeneration des Molches *Pleurodeles waltlii*. Naturwissenschaften **48** : 486.

(1) Curry-Lindahl, K. Landscape changes and the vertebrate fauna in Sweden during the last 150 years. Bijdr. Dierk. **31** : 27–44 14 figs.

(2) Curry-Lindahl, K. Contribution à l'étude des vertébrés terrestres en Afrique tropicale. Explor. Parc Nat. Albert et Kagera, Miss. Curry-Lindahl No. 1 : 1–331 23 pls. 92 figs. [English summary.]

Curtis, A. S. G. Timing mechanisms in the specific adhesion of cells. Exp. Cell Res. Suppl. No. 8 : 107–122 15 figs.

Cury, G., see Dollander, A.

Cuspinera, A. J. El "Centro de Adaptacion y Experimentacion Zoológica" de Guinea española. Mensaje No. 1 : [9–10] 3 figs.

Czyba, J. C., see Kehl, R.

Dąbrowski, Z. The influence of penicillin and streptomycin on the growth and development of frog tadpoles *Rana esculenta* L. and *Rana temporaria* L. Acta biol. cracov. (Zool.) **3** 1960 [1961] : 173–194 20 figs.

Dalmasso, A. P., see Flores, I.

Dalton, H. C., see Rhodes, R. H.

Dalton, H. C., see Vankin, C. L.

Dalton, H. C., see Zimmerman, S. B.

Dartnall, H. J. A. Visual pigments before and after extraction from visual cells. Proc. roy. Soc. **154B** (955) : 250–266 8 figs.

Dasgupta, S., see Volpe, E. P.

d'Audretsch, I. F. C., see Audretsch, I. F. C. d'.

Davison, R. Operation "toad". Rep. Camberley nat. Hist. Soc. **1960** : 16.

Deb, C. & Mukherji, M. Histochemical study on the cytoplasmic constituents of kidney of toad (*Bufo melanostictus*) during acute dehydration. J. Histochem. & Cytochem. **9** : 126–131 15 figs.

Dechambe, C. Recherche sur l'origine du matériel formateur du pavillon génital femelle de la grenouille agile (*Rana dalmatina* Bon.). C.R. Soc. Biol. Paris **154** : 2258–2260.

Dechambe, C. & Cambar, R. Les diverses parties du pronéphros possèdent des réactivités différentes à l'action de l'hormone thyroïdienne ; démonstration expérimentale chez la Grenouille agile (*Rana dalmatina* Bon.). C.R. Acad. Sci. Paris **252** : 3333–3335.

(1) Deck, J. D. Morphological effects of partial denervation on regeneration of the larval salamander forelimb. J. exp. Zool. **148** : 299–307.

(2) Deck, J. D. The histological effects of partial denervation and amputation in larval salamander forelimbs. J. exp. Zool. **148** : 69–79 2 pls.

Decken, A. von der, see Muscatello, U.

Decroly, M., see Brachet, J.

DeLanney, L. E. Homografting of sexually mature Mexican axolotls, *Siredon mexicanum*. Amer. Zool. **1** : 349. [Abst.]

DeLanney, L. E., Johnson, E. R. & Woodham, G. Preliminary observations on homograft reactions in axolotls and their possible genetic implications. Proc. Ind. Acad. Sci. **20** 1960 [1961] : 261. [Abst.]

DeLanney, L. E. & Neal, R. R., Jr. Experimental production of gill-lessness in newts and axolotls. Proc. Ind. Acad. Sci. **70** 1960 [1961] : 261. [Abst.]

Delsol, M. Recherches sur des organes isolés de têtard en survie. Évocation de la métamorphose en quelques heures dans l'intestin malgré l'absence de thyroxine. C.R. Acad. Sci. Paris **252** : 2456–2458.

Delsol, M. & Flatin, J. Test de dosage de l'hormone gonadotrope FSH sensible jusqu'à 1/1000 d'unité-souris sur le têtard d'*Alytes obstetricans*. C.R. Soc. Biol. Paris **155** : 1216–1217.

de Luque, O., Hunter, A. S. & F. R. Osmotic studies of amphibian eggs. III. Ovulated eggs. Biol. Bull., Woods Hole **121** : 497–506.

Denis, H. Recherche sur la différenciation protéique au cours de développément des amphibiens. J. Embryol. exp. Morph. **9** : 422–445 8 figs.

Denman, N. S. A range extension of the four-toed salamander in Eastern Canada. Can. Fld. Nat. **75** : 110.

Dennis, D. M., see Adler, K. K.

(1) Dent, J. N. Observations on the reproduction and development of a West Indian frog, *Leptodactylus albilabris* (Grunther). ASB Bull. **2** 1955 : 5. [Abst.]

(2) Dent, J. N. Seasonal and sexual variation in the pituitary gland of *Triturus viridescens*. Anat. Rec. **141** : 85–95 13 figs.

Dent, J. N., see Lynn, W. G.

DePoe, C. E., Funderburg, J. B., Jr. & Quay, T. L. The reptiles and amphibians of North Carolina : a preliminary check list and bibliography. J. Elisha Mitchell sci. Soc. **77** : 125–136.

Dessauer, H. C., Fox, W. & Volpe, E. P. Differentiation of the toads *Bufo valliceps*, *Bufo fowleri* and their natural hybrid by electrophoresis of blood proteins. ASB Bull. **7** 1960 : 26–27. [Abst.]

Dettlaff, A. A., see Dettlaff, T. A.

(1) Dettlaff, T. A. & A. A. Dimensionless characteristics of duration of development in embryology. Dokl. Akad. Nauk SSSR **134** 1960 : 199–202. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **134** : 643–646 3 figs.]

(2) Dettlaff, T. A. & A. A. On relative dimensionless characteristics of the development duration in embryology. Arch. Biol. Paris **72** : 1–16 6 figs.

(1) Deuchar, E. M. Enhancement of ATP-ase activity, somite segmentation rate and aggregation of somite cells of *Xenopus* embryos by treatment with ATP. Exp. Cell Res. **23** : 21–28 4 figs.

(2) Deuchar, E. M. Amino acid activation in embryonic tissues of *Xenopus laevis*. I. Increased ^{32}P exchange between pyrophosphate and adenosine triphosphate in the presence of added L-leucine. Exp. Cell Res. **25** : 364–373 2 figs.

Deuloffu, V., see Frydman, B.

Devilliers, C. Mouvements cellulaires dans le développement de l'embryon des amphibiens et des poissons. Exp. Cell Res. Suppl. No. 8 : 221–233 4 figs.

Dexter, R. P., see Wolf, K.

Diacu, L., see Russu, I. G.

Dial, N. A. Inhibitory control of neural differentiation in explants of *Rana pipiens* gastrula ectoderm. J. Morph. **108** : 311–326 3 pls.

(1) Di Berardino, M. A. Investigations of the germ-plasm in relation to nuclear transplantation. J. Embryol. exp. Morph. **9** : 507–513 1 pl.

(2) Di Berardino, M. A. The karyotype of *Rana pipiens* and investigation of its stability during embryonic differentiation. Amer. Zool. **1** : 349–350. [Abst.]

Dick, R. I. Preliminary notes on the relationships existing between the leech, *Marsupiobdella africana*, the river-crab, *Potamon perlatus*, and the platanna, *Xenopus laevis*, as observed in specimens taken from the Kromboom River in the Cape Province of the Union of South Africa. J. sci. Soc. Cape Town **2** 1959 : 47–49 1 fig.

Disclos, G., see Bounhiol, J.-J.

Disclos, P. & Bounhiol, J.-J. Existence d'une pause automnale de la morphogenèse avec réactivité réduite à la thyroxine chez les têtards du Crapaud accoucheur (*Alytes obstetricans* Laur.). C.R. Ass. franç, Adv. Sci. **78** : 47–48. [Abst.] [*See also* same paper p. 57.]

Dixon, J. R., see Fugler, C. M.

Dobie, J. L., see Volpe, E. P.

Dokov, V. K. L'éosinophilie pulmonaire chez les amphibiens et les reptiles. Folia biol. Krakow **9** : 151–158 5 figs.

Dollander, A. & Bonhomme, C. Effets des ultrasons sur la structure et la permeabilité corticales de l'œuf de *Triturus alpestris*. C.R. Soc. Biol. Paris **154** 1960 : 1254–1256.

Dollander, A., Cury, G. & Brouant, J.-F. Sur les conséquences de l'expérience de Schultze–Pasteels appliquées à l'œuf d'amphibien urodele. C.R. Assoc. Anat. No. 106 1960 : 224–230, 3 figs.

Dollander, A. & Maillet, M. Modifications de la structure et de la perméabilité corticales ainsi que du développement embryonnaire après centrifugation mondérée de l'œuf individis de *Triturus alpestris*. C.R. Soc. Biol. Paris **155** : 357–359.

Dolifus, R. P., see Stoll, N. R.

Donahue, J. K., Connor, R. S. & Manner, H. W. Observations on the endothelial nuclei of certain vertebrate extremity veins. Anat. Rec. **139** : 421–427 12 figs.

Donahue, J. K., see Manner, H. W.

Donner, K. O. The effect of a coloured adapting field on the spectral sensitivity of frog retinal elements. J. Physiol. **149** 1959 : 318–326 4 figs.

(1) Donner, K. O. & Rushton, W. A. H. Retinal stimulation by light substitution. J. Physiol. **149** 1959 : 288–302 6 figs.

(2) Donner, K. O. & Rushton, W. A. H. Rod–cone interaction in the frog's retina analysed by the Stiles–Crawford effect and by dark adaptation. J. Physiol. **149** 1959 : 303–317 8 figs.

Donnet, V., see Stahl, A.

Donoso, A. O. Présence de thyroxine dans le plasma du Crapaud. C.R. Soc. Biol. Paris **155** : 156–157.

Donoso, A. O., see Trivelloni, J. C.

Droin, A., see Kiortsis, V.

Dubrul, E. L. Bipedal locomotion : general comments. Amer. Zool. **1** : 446. [Abst.]

(1) Duellman, W. E. Descriptions of two new species of frogs, genus *Ptychohyla*. Studies of American hylid frogs. V. Publ. Mus. nat. Hist. Univ. Kans. **13** : 349–357 1 pl. 2 figs.

(2) Duellman, W. E. Description of a new species of tree frog from México. Studies of American hylid frogs. VI. Herpetologica **17** : 1–5 2 figs.

(3) Duellman, W. E. A new species of fringe-limbed tree frog from Mexico. Studies of American hylid frogs. VIII. Trans. Kansas Acad. Sci. **64** : 349–352 2 figs.

Duellman, W. E. & Hoyt, D. L. Description of a new species of *Hyla* from Chiapas, Mexico. Copeia **1961** : 414–417 3 figs.

Dumont, L., see Kehl, R.

Duncan, J. T. The relationship of macrophages to the development of melanophores during metamorphosis in *Taricha torosa*. J. exp. Zool. **147** : 151–166 9 figs.

Dydyńska, M. Physiological and biochemical properties of dehydrated muscles and heart of the frog *Rana esculenta*. Bull. Soc. polon. Sci. (Sci. biol.) **9** : 57–60 3 figs.

(1) Dzendolet, E. Standing potentials of the frog's eye. J. Optical Soc. Amer. **50** 1960 : 551–555 4 figs.

(2) Dzendolet, E. Effect of preparation and electrode placement on the frog ERG. J. Optical Soc. Amer. **50** 1960 : 903–908 5 figs.

Dzieduszycka, S., see Lamotte, M.

(1) Eakin, R. M. Fine structure of some little known photoreceptors. Amer. Zool. **1** : 446. [Abst.]

(2) Eakin, R. M. Photoreceptors in the amphibian frontal organ. Proc. nat. Acad. Sci. Wash. **47** : 1084–1088 2 figs.

(1) Eakin, R. M. & Westfall, J. A. Photoreceptors in the stirnorgan of tadpoles of the tree-frog, *Hyla regilla*. Amer. Zool. **1** : 352. [Abst.]

(2) Eakin, R. M. & Westfall, J. A. The development of photoreceptors in the stirnorgan of the tree-frog *Hyla regilla*. Embryologia **6** Mangold Festschrift : 84–98 4 pls.

Eberstein, A. & Sandow, A. Fatigue in phasic and tonic fibers of frog muscle. Science **134** : 383–384 1 fig.

Edelstein, C. Population dynamics in reptiles and amphibians. Stat. Naturv. Forskn. Årsb. **7** 1954 : 147–155 3 figs. [English summary.] [Not seen.]

Edman, K. A. P. & Grieve, D. W. The role of calcium and zinc in the electrical and mechanical responses of frog sartorius muscle. Experientia **17** : 557–558.

Eeden, J. A. van, see Ryke, P. A. J.

Eguchi, G. & Ishikawa, M. ^{32}P-uptake by dorsal and ventral halves of the iris at the beginning of lens regeneration in the newt. Embryologia **5** 1960 : 219–226 2 figs.

Eiselt, J. Amphibia, Reptilia. Cat. Faun. Aust. Teil **21ab** : 1–21.

Ellis, R. A., see Parakkal, P. F.

Enemar, A. The ontogeny of the hypophysial growth-promoting activity of the laboratory mouse, studied by means of tadpole tests. With notes on the response of the tadpoles to bovine growth hormone preparation. Acta Univ. lund. (Avd. 2) N.F. **56** (20) : 1–34 2 figs.

Ermakova, N. I., see Polezhaev, L. V.

Etheridge, R. Additions to the herpetological fauna of Isla Cerralvo in the Gulf of California, Mexico. Herpetologica **17** : 57–60.

Etkin, W., Levitt, G. & Masur, M. Inhibitory control of pars intermedia by brain in adult frog. Anat. Rec. **139** : 300–301. [Abst.]

(1) **Etzensperger, J.** Renforcement de la secousse musculaire par l'ion potassium. Étude myographique et électrophysiologique sur fibre unique du couturier de Grenouille. C.R. Soc. Biol. Paris **155** : 831–835 2 figs.

(2) **Etzensperger, J.** Renforcement de la secousse et modifications des potentials de repos et l'action provoqués par l'activité préalable. Étude microphysiologique sur la fibre striée de Grenouille C.R. Soc. Biol. Paris **155** : 1336–1340 3 figs.

Evans, E. E. & Horton, S. L. Synthesis and electrophoretic distribution of antibodies in the amphibian, *Bufo marinus*. Proc. Soc. exp. Biol. N.Y. **107** : 71–74 1 fig.

Faber, J., see Michael, M. I.

(1) **Fabre, M. & Marescaux, J.** Recherches sur la sensibilité de la thyroïde du têtard (*Rana temporaria*) à la thyréostimuline. C.R. Soc. Biol. Paris **154** 1960 [1961] : 1625–1628 3 figs.

(2) **Fabre, M. & Marescaux, J.** Influence de la thyroïdectomie sur la thyréostimulinémie du Cobaye. Titrage biologique sur le têtard (*Rana temporaria*). C.R. Soc. Biol. Paris **155** : 121–125 3 figs.

Faiszt, J., see Bartha, T.

Fallon, K., see Ortman, R.

Fanslow, D. J. The relation of oxygen consumption to body weight and starvation in *Rana pipiens* and *Rana catesbeiana*. Proc. S. Dak. Acad. Sci. **40** : 103–111 3 figs.

Fantl, P. A comparative study of blood coagulation in vertebrates. Aust. J. exp. Biol. med. Sci. **39** : 403–412 2 figs. tables.

Farfaglio, G. Ricerche sulla meccanica dello sviluppo della bocca nella larva di *Discoglossus pictus* (Trattamento del territorio presuntivo della bocca o della cresta neurale trasversa con LiCl). R.C. Accad. Lincei (8) **31** : 57–62 2 figs.

Farinella-Ferruzza, N. Azione del sistema nervoso e della corda nella transformazione da coda in arto nei trapianti di *Triton cristatus* su *Discoglossus pictus*. R.C. Accad. Lincei (8) **31** : 53–56 3 figs.

(1) **Fautrez, J. & Amano, H.** A propos de l'apparition de membres surnuméraires chez des larves d'Urodèles après exogastrulation partielle. C.R. Soc. Biol. Paris **155** : 676–677.

(2) **Fautrez, J. & Amano, H.** Pourquoi le cœur ne se développe-t-il pas après extirpation de l'entoblaste dans une larve d'Urodèle ? C.R. Soc. Biol. Paris **155** : 2219.

Fawcett, D. W. & Hilfer, S. R. The fine structure of the spermatozoa of *Triturus viridescens*. Anat. Rec. **139** : 329. [Abst.]

Federici, L. Azione di estratti miometrali sullo sviluppo di girini di anfibi anuri. Atti Accad. Ligure **15** 1959 : 370–374. [English summary.]

Fehrn, A. Uptake of iron-59 in *Rana pipiens*. J. Colo.-Wyo. Acad. Sci. **5** (2) : 55. [Abst.]

Félix, L., see Candelas, G. C.

Feng, L. S., see Latimer, H. B.

Fenton, O. Distribution of the smooth newt in Ireland. Irish Nat. J. **13** : 278.

(1) **Ferguson, D. E.** The geographic variation of *Ambystoma macrodactylum* Baird, with the description of two new subspecies. Amer. midl. Nat. **65** : 311–338 5 figs. tables.

(2) **Ferguson, D. E.** The herpetofauna of Tishomingo County, Mississippi, with comments on its zoogeographic affinities. Copeia **1961** : 391–396 1 fig.

Fernandez de Molina, A., see Bravo, M. C.

Ficq, A. Localization of different types of ribonucleic acids (RNA's) in amphibian oocytes. Exp. Cell Res. **23** : 427–429 2 figs.

Fiennes, R. N. T.-W.-. Report of the pathologist for the year 1959. Proc. zool. Soc. Lond. **136** : 489–503.

Finamore, F. J. The nucleic acids—metabolic key to development ? Quart. Rev. Biol. **36** : 117–122 2 figs.

Finamore, F. J. & Frieden, E. Nucleic acids and induced amphibian metamorphosis. J. Biol. Chem. **235** 1960 : 1751–1755 3 figs.

Finkelstein, A. Electrical excitability of isolated frog skin. Nature, Lond. **190** : 1119–1120.

(1) **Finnegan, C. V.** An analysis of the postgastrula differentiation of the hypomere. I. The influence of tissue mass and of endoderm in *Ambystoma punctatum*. J. Embryol. exp. Morph. **9** : 294–309 2 pls.

(2) **Finnegan, C. V.** An analysis of the postgastrula differentiation of the hypomere. II. The influence of endoderm and tissue mass in *Taricha torosa*. J. Embryol. exp. Morph. **9** : 609–617 5 figs.

(3) Finnegan, C. V. A study of nuclei and intercellular ground substance during the *in situ* differentiation of somites in *Taricha torosa*. J. Embryol. exp. Morph. **9** : 650–660 5 figs. 1 pl.

Fischberg, M., see Blackler, A. W.

Fischman, D. A., see Hay, E. D.

Flathers, A. R., see Wright, P. A.

Flatin, J., see Delsol, M.

Flickinger, R. A. The effect of ethionine on the development of muscular response in the frog embryo. J. exp. Zool. **147** : 21–31 9 figs.

Flores, I. Effet de l'insuline sur la glycogénolyse du foie perfusé de Crapaud. C.R. Soc. Biol. Paris **155** : 157–158.

Flores, I. & Dalmasso, A. P. Oxygène et libération de glucose du foie perfusé de Crapaud. C.R. Soc. Biol. Paris **155** : 149–150.

(1) Fonteyne, J. J. de la. De vuursalamander in Zuid-Limburg. Lacerta **19** : 87–89 2 photos. [English summary.]

(2) Fonteyne, J. J. de la. Geelbuikpadden in Limburg. Lacerta **20** : 12–13, 16, fig. [English summary.]

Foote, C. L. & F. M. Culture d'ovaires d'Axolotl sur différents milieux. C.R. Acad. Sci. Paris **253** : 1351–1352 1 pl.

Foote, F. M., see Foote, C. L.

Forest, J., see Stoll, N. R.

Forsyth, M. Distribution of smooth newt, *Triturus vulgaris*, in Ulster. Irish Nat. J. **13** : 263.

Fouquette, M. J. Status of the frog *Hyla albomarginata* in Central America. Fieldiana (Zool.) **39** : 595–601 3 figs.

Fowler, J. A. Anatomy and development of racial hybrids of *Rana pipiens*. J. Morph. **109** : 251–268 6 figs.

(1) Fox, H. Quantitative analysis of normal growth of the pronephric system in larval Amphibia. Proc. zool. Soc. Lond. **136** : 301–315 10 figs. 1 pl.

(2) Fox, H. The occipital crest and anterior spinal nerves in the larval urodele *Salamandra maculosa*. Brit. J. Herpetol. **2** : 211–213 5 figs.

Fox, W., see Dessauer, H. C.

Francis, E. T. B. The sources and nature of salivary secretions in Amphibia. Proc. zool. Soc. Lond. **136** : 453–476 1 fig. 2 pls.

Frank, G. B. The influence of bromide ions on excitation–contraction coupling in frog's skeletal muscle. J. Physiol. **156** : 35–48 6 figs.

Frankel, D. L., see Spiegel, M.

Frassineti, A. & Lanza, B. Un nuovo test biologico per la diagnosi precoce di gravidanza : il maschio di *Rana esculenta* L. Nota preventiva. Settim. med. **36** (40–43) 1948 : 372–374.

Freeman, G. & Overton, J. Lens regeneration from the cornea in *Xenopus laevis*. Amer. Zool. **1** : 448–449.

(1) Freytag, G. E. Lurche–Amphibia. *In* Exkursionsfauna von Deutschland Band III Wirbeltiere. [Editor] E. Stresemann. Volk und Wissen Volkseigener Verlag. Berlin : 79–114 40 figs.

(2) Freytag, G. E. Der Langzehen-Querzahnmolch. Reprint from Aquar. u. Terrar. : 116–117 1 fig. [Date and Vol. unknown.]

(3) Freytag, G. E. Waldsalamander-interessante Terrarienpfleglinge. Aquar. u. Terrar. **8** (11) : 346–349 4 figs.

(4) Freytag, G. E. Importberichte. Reprints from Aquar. Terrar. Z. **12** 1959 : 310–312, 339–340, 377–378 ; **13** 1960 : 88–90, 123–124, 183–184, 216–218, 278–279, 308–310 ; **14** 1961 : 57–59 16 figs.

Freytag, G. E. & Petzold, H.-G. Beiträge zur Ökologie und Anatomie von *Paramesotriton deloustali* (Bourret 1934) nebst Bemerkungen über *Pachytriton brevipes* (Sauvage 1875). S.B. Ges. naturf. Fr. N.F. **1** (1–5) : 143–162 6 figs.

Freytag, G. E., see Fuhn, I. E.

Frieden, E. Biochemical adaptation and anuran metamorphosis. Amer. Zool. **1** : 115–149 25 figs.

Frieden, E. & Westmark, G. W. On the anomalous activity of thyroxin analogs in tadpoles. Science **133** : 1487–1489 1 fig.

Frieden, E., see Finamore, F. J.

Frieden, E., see Herner, A. E.

Frieden, E., see Lewis, E. J. C.

Fritzsche, J. & Obst, F. J. Ein neues Vorkommen des Springfrosches (*Rana dalmatina*) Bonaparte in Mitteleuropa. Zool. Anz. **167** : 390–391.

Frost, D. Inhibition of lens regeneration by implanted lenses in the eyes of the adult newt *Diemictylus* (=*Triturus*) *viridescens*. Developmental Biol. **3** : 516–531 12 figs.

Frydman, B. & Deuloffu, V. Isolation of 5-hydroxytryptamine from the skin of the toad *Bufo arenarum* Hensel. Experientia **17** : 545–546.

Frye, B. E. Differentiation of transplanted pancreatic rudiments. ASB Bull. **7** 1960 : 28. [Abst.]

Fugler, C. M. & Dixon, J. R. Notes on the herpetofauna of the El Dorado area of Sinaloa, Mexico. Publ. Mus. Mich. St. Univ. Biol. Ser. **2** (1) : 1–23 3 figs.

Fuhn, I. E. & Freytag, G. E. Taxonomische und ökologische Studien über *Triturus cristatus* in Rumänien. Zool. Anz. **166** : 159–173 3 figs.

Funaki, S. Spontaneous spike-discharges of vascular smooth muscle. Nature, Lond. **191** : 1102–1103 4 figs.

Funderberg, J. B., Jr., see DePoe, C. E.

Funes, J. M. de & Padilla, M. Plerocercosis en *Bufo arenarum* Hensel. Actas Trab. I Congr. sudamer. Zool. 1959 **2** 1960 [1961] : 137–144.

Furieri, P. Osservazioni sullo spermatozoo di *Triturus cristatus carnifex* (Laurenti), studio al microscopio elettronico. Monit. zool. ital. **68** 1960 : 90–102 4 pls.

Furusawa, M. Sex differentiation of the larval newt composed of heterosexual halves. J. Biol. Osaka City Univ. **12** : 1–8 1 pl. 2 figs.

Gabe, M. Données histologiques sur les macrothyréocytes (cellules parafolliculaires) de quelques sauropsidés et anamniotes. Acta anat. **47** : 34–54 29 figs.

Gaggero, P. Caso de monstruosidad en el sapo *Bufo arenarum* Hensel. Actas Trab. I Congr. sudamer. Zool. 1959 **4** 1960 [1961] : 69–72 3 figs.

Gagnon, A. L'absorption intestinale des acides aminés, *in vitro*, chez la grenouille *Rana clamitans*. Ann. ACFAS **27** : 39. [Abst.]

Gall, J. G. & Callan, H. G. Patterns of synthesis in lampbrush chromosome loops. Genetics **46** : 867. [Abst.]

(1) Gallardo, J. M. Anfibios anuros de Misiones con la descripcion de una nueva especie de *Crossodactylus*. Neotropica **7** : 33–38 4 figs.

(2) Gallardo, J. M. Nuevo genero de Brachycephalidae (Amphibia Anura). Neotropica **7** : 71–72.

(3) Gallardo, J. M. *Hyla strigilata* Spix e *Hyla squalirostris* A. Lutz en la republica Argentina ; y algunas observaciones sobre otros anfibios del grupo de *Hyla rubra* Daudin. Comun. Inst. Invest. Cienc. nat. B. Aires (Zool.) **3** No. 5 : 145–158 1 pl.

(4) Gallardo, J. M. Observaciones biológicas sobre *Hyla raddiana* Fitz., de la provincia de Buenos Aires. Cienc. e Invest. **17** : 49–96 5 figs.

(5) Gallardo, J. M. Three new toads from South America : *Bufo manicorensis*, *Bufo spinulosus altiperuvianus* and *Bufo quechua*. Breviora No. 141 : 1–8 3 pls.

(6) Gallardo, J. M. Panorama zoologico Argentino: Batracios y reptiles. Physis **22** (63) : 171–180.

(7) Gallardo, J. M. La ubicacion sistematica y distribucion geografica de Brachycephalidae Argentinos. Reun. Trab. Comun. Cienc. nat. geog. Argentino **1961** : 205–212 4 figs.

(8) Gallardo, J. M. On the species of Pseudidae (Amphibia, Anura). Bull. Mus. comp. Zool., Harv. **125** : 111–134 4 figs. 1 pl.

Gallera, J. Dissociation expérimentale entre la morphogenèse et la différenciation de l'ébauche neurale chez les amphibiens. Rev. suisse Zool. **68** : 311–330 6 figs.

Gallera, J., see Correia, J. C.

Gallien, L. Double conversion du sexe chez le Triton *Pleurodeles waltlii* Michah. C.R. Acad. Sci. Paris **252** : 2768–2770.

(1) Gans, C. Salamandrische Welt, Amphibien und Reptilien. [Salamandrian world. Amphibians and Reptiles.] By R. Gerlach (Review). Copeia **1961** : 363.

(2) Gans, C. Welches Tier ist das ? Kriechtiere und Lurche. [What animal is it ? Reptiles and Amphibians.] By R. Mertens (Review). Copeia **1961** : 363–364.

(3) Gans, C. The first record of egg laying in the caecilian *Siphonops paulensis* Boettger. Copeia **1961** : 490–491.

(4) Gans, C. A bullfrog and its prey. A look at the biomechanics of jumping. Nat. Hist., N.Y. **70** (2) : 26–37 14 figs. cover photo.

Gargouil, Y.-M., see Laplaud, J.

Gargouil, Y.-M., see Tricoche, R.

Garms, R. Biozönotische Untersuchungen an Entwässerungsgräben in Flussmarschen des Elbe-Aestuars. Arch. Hydrobiol. Suppl. **26** 1 (3–4) : 344–462 5 pls. 21 figs.

Gatenby, J. B. The electron microscopy of centriole, flagellum and cilium. J. R. micr. Soc. (3) **79** : 299–317 35 figs.

Gauss, G. H. Ein Beiträg zur Kenntnis des Balzverhaltens einheimischen Molche. Z. Tierpsychol. **18** : 60–66. [English summary.]

Gee, R. E. The rearing of axolotls. Rep. Oundle Sch. nat. Hist. Soc. **1961** : 49–50.

Gehlbach, F. R. Partial albino *Desmognathus f. fuscus* from 3 miles north of Buena Vista, Scioto County, Ohio. J. Ohio herpet. Soc. **3** (1) : [cover photo.]

Gehlbach, F. R., see Collette, B. B.

Geijskes, D. C. Zoogeografía de Surinam. Actas Trab. I Congr. sudamer. Zool. 1959 **1** 1960 [1961] : 253–258.

George, J. A midsummer night : unfolds exciting secrets of nature. Audubon Mag. **63** : 190–193 4 figs.

Germain, A., see Kehl, R.

Geuskens, M. Étude autoradiographique de l'effet des inhibiteurs métaboliques sur les relations entre le noyau et le cytoplasme des oocytes d'astéries et de grenouilles. Arch. Biol. Paris **72** : 153–171.

Ghiara, G. Ricerche intorno alla struttura microscopica, submicroscopica ed istochimica e alle funzioni degli involucri ovulari di *Discoglossus pictus* Otth. e di altre specie di Anfibi. Arch. zool. (ital.) Napoli **45** 1960 [1961] : 9–92 2 figs. 3 pls. [English summary.]

(1) Ghirardelli, E. Alcuni risultati di experimenti di asportazione e di trapianto nella regione genitale di embrioni de *Bufo bufo*. R.C. Accad. Lincei (8) **30** : 284–291 5 figs.

(2) Ghirardelli, E. Risultati di experimenti di trapianto nella regione posteriore dell'abbozzo genitale in embrioni di *Bufo bufo*. R.C. Accad. Lincei (8) **31** : 152–157 3 figs.

(3) Ghirardelli, E. Nuovi risultati di experimenti di trapianto nella regione anteriore dell'abbozzo genitale in embrioni di *Bufo bufo*. R.C. Accad. Lincei (8) **31** : 485–489 2 figs.

Ghirardelli, E., see Vannini, E.

Ghircoiaşiu, M., see Pora, E. A.

Gibbons, I. R. Observations on the structure of cilia and flagella. Proc. Europ. reg. Conf. Electr. Microsc. Delft **2** 1960 [1961] : 929–933 13 figs.

Gillespie, R. F., see Jones, A. W.

Gilmer, T. E., Jr., see Campbell, A. D.

Giltz, M. L. A study of the physiological processes associated with the emission of spermatozoa in the leopard frog, *Rana pipiens*. Diss. Abstr. **20** 1959 : 805–807.

Gipouloux, J.-D. & Cambar, R. Recherches sur les facteurs déterminant la migration des cellules de l'uretère primaire (Amphibiens Anoures). C.R. Acad. Sci. Paris **252** : 3643–3645 6 figs.

Glade, R. W. & Scott, N. J. Influence of tail skin, epidermis, and dermis on forelimb regeneration in the axolotl. Biol. Bull., Woods Hole **121** : 390. [Abst.]

(1) Goin, C. J. Synopsis of the genera of hylid frogs. Ann. Carneg. Mus. **36** (2) : 5–18.

(2) Goin, C. J. Three new centrolenid frogs from Ecuador. Zool. Anz. **166** : 95–104 3 figs.

(3) Goin, C. J. Description of a new genus and species of tree frog from South America. Copeia **1961** : 62–65 2 figs.

(4) Goin, C. J. The growth and size of *Siren lacertina*. Herpetologica **17** : 139.

Goin, C. J. & Hester, M. Studies on the development, succession and replacement of teeth in the frog *Hyla cinerea*. J. Morph. **109** : 279–287 8 figs.

Goin, C. J., see Carr, A.

Goin, C. J., see Cochran, D. M.

Göke, G. Schnitt durch den Kopf des Wasserfrosches. Beispiel einer Übersichtsaufnahme ohne Mikroskop. Mikrokosmos **50** : 10–11 1 fig.

Gómez Dumm, C. L. A., see Prieto Díaz, H.

Goodchild, C. G. Regeneration of the gut in adult anurans. ASB Bull. **2** 1955 : 6. [Abst.]

Gordon, M. S., Schmidt-Nielsen, K. & Kelly, H. M. Osmotic regulation in the crab-eating frog (*Rana cancrivora*). J. exp. Biol. **38** : 659–678 9 figs.

(1) Gordon, R. E. Comparative studies of locomotive activity in Appalachian salamanders. ASB Bull. **8** : 25. [Abst.]

(2) Gordon, R. E. The movement of displaced green salamanders. Ecology **42** : 200–202.

Gordon, R. E., see Williams, K. L.

Goss, R. J. Regeneration of vertebrate appendages. Advanc. Morphogenesis **1** : 103–152 6 figs.

(1) Goux, L. Contribution à l'étude biogéographique écologique et biologique de l'Euprocte de Corse [*Euproctus montanus*] (Savi) [Salamandridae.] Vie et Milieu Suppl. No. 8 1959 : 223–258 map.

(2) Goux, L. Nouvelles observations sur la biogéographie, l'écologie et la biologie de l'Euprocte de Corse, *Euproctus montanus* (Savi) [Salamandridae]. Vie et Milieu Suppl. No. 8 1959 : 259–277 5 figs.

Graham, J. D. P. The response to catecholamines of the melanophores of *Xenopus laevis*. J. Physiol. **158** (2) (Proc.) : 5P–6P 1 fig.

Grainger, J. N. R. The early stages in the adaptation of the frog *Rana temporaria* to higher temperatures. Verh. dtsch. zool. Ges. **1960** : 60–72 7 figs.

(1) Grandison, A. G. C. Chilean species of the genus *Eupsophus* (Anura : Leptodactylidae). Bull. Brit. Mus. (nat. Hist.) Zool. **8** : 111–149 7 pls. 22 figs. 1 map.

(2) Grandison, A. G. C. A review of "Poisonous amphibians and reptiles ; recognition and bite treatment," by F. Boys & H. M. Smith. Nature, Lond. **186** 1960 : 269.

Grant, J. The tailed toad in Southeastern British Columbia. Can. Fld Nat. **75** : 165.

Grant, P., see Lang, C. A.

Grant, W. C., Jr. Special aspects of the metamorphic process : second metamorphosis. Amer. Zool. **1** : 163–171 7 figs.

Grant, W. C., Jr. & Waterman, A. J. Effect of light on thyroid activity in *Diemictylus viridescens*. Amer. Zool. **1** : 357. [Abst.]

Grant, W. C., Jr., see Weiss, A. B.

Green, N. B. Recent developments in Herpetology in West Virginia. Proc. W. Va. Acad. Sci. **33** : 21–27 1 fig.

Gribenski, A. Sur l'action tonique des canaux semi-circulaires chez la grenouille (*Rana esculenta*). C.R. Soc. Biol. Paris **154** : 2218–2219 2 figs.

Grieg, A. B., see Newman, R. H.

Grieve, D. W., see Edman, K. A. P.

Griffiths, I. The form and function of the fore-gut in anuran larvae (Amphibia, Salientia) with particular reference to the *manicotto glandulare*. Proc. zool. Soc. Lond. **137** : 249–283 13 figs. 6 pls.

Grigor'eva, N. F. *In vivo* observations on the interneuronal synapses. Dokl. Akad. Nauk SSSR **134** 1960 : 179–182. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **134** : 751–753 4 figs.]

Grundfest, H., see Belton, P.

Grzybek, A., see Wróblewski, R.

Grzycki, S. Examination of mitochondria by phase contrast refractometry. Acta anat. **45** : 124–132 4 pls.

Guardabassi, A. Gli isolotti di Langerhans del pancreas di larve di *Xenopus laevis* (Daudin) trattate con 4-metil-2-tiouracile. Monit. zool. ital. **68** 1960 [1961] : 140–145 2 figs. [English summary.]

Guibé, J. La répartition geographique des Batraciens de Madagascar. Mem. Soc. Biogéogr. N.S. **1** 1953 : 167–169.

(1) Guibé, J. & Lamotte, M. Deux espèces affines de batraciens africains longtemps confondues : *Ptychadena oxyrhynchus* (Smith) et *Pt. abyssinica* (Peters). Bull. Mus. Hist. nat. Paris (2) **32** 1960 [1961] : 380–391 5 figs.

(2) Guibé, J. & Lamotte, M. Deux espèces nouvelles de batraciens de l'Ouest africain appartenant au genre *Phrynobatrachus* : *Ph. guineensis* n. sp. et *Ph. alticola* n. sp. Bull. Mus. Hist. nat. Paris (2) **33** : 571–576 4 figs.

Guillemin, R., see Long, J. M.

Gunstone, D. The toad's stone. Canad. Audubon **23** : 118–119 1 fig.

Guppy, R. Newts in the New World. Aquarist & Pondkpr. **26** : 164–166 3 figs.

Gurdon, J. B. The transplantation of nuclei between two subspecies of *Xenopus laevis*. Heredity **16** (3) : 305–315 3 pls. 2 figs.

(1) Guth, C. L'arc hyoïdien. Bull. Mus. Hist. nat. Paris (2) **32** : 473–483 12 figs.

(2) Guth, C. L'arc hyoïdien (suite). Bull. Mus. Hist. nat. Paris (2) **33** : 79–83 5 figs.

Haas, R. Observations of the African frog *Hymenochirus boulengeri*. Aquarium, Norristown **30** : 620–623, 626, 690.

Haas, R., see Hildemann, W. H.

Hackett, E. Comparative studies in vertebrate blood coagulation. (*a*) The toad, *Bufo marinus*. Rep. Inst. med. vet. Sci. S. Aust. No. 22 1959–60 [1961] : 18–19.

Hackett, E. & LePage, R. The clotting of the blood of an amphibian *Bufo marinus* Linn. I. Prothrombin–thrombin and " fibrinogen–fibrin " stages pp. 57–65. II. Blood thromboplastic activity pp. 67–77. Aust. J. exp. Biol. med. Sci. **39** : 57–77 2 figs. tables.

Haggard, D., see Collins, J. T.

Hahn, D. E. Collecting notes on Central Korean reptiles and amphibians. J. Ohio herp. Soc. **2** (4) 1960 : 16–24. [Not seen.]

Hahn, H. P. von, Niehus, B., Scholl, A. & Lehmann, F. E. Chemisch bedingte Wachstumshemmung trotz unterschiedlicher Beeinflussung der Aktivitäten von Kathepsin und saurer Phosphatase in Schwanzregeneraten von *Xenopus* larven. Naturwissenschaften **48** : 386–387 1 fig.

(1) Hama, K. The fine structure of the desmosomes in frog mesothelium. J. biophys. biochem. Cytol. **7** 1960 : 575–578 1 pl.

(2) Hama, K. On the existence of filamentous structures in endothelial cells of the amphibian capillary. Anat. Rec. **139** : 437–441 1 pl.

Hansard, S. L., see Wilson, B.

Hanzawa, S., Asano, K. & Takai, F. Catalogue of type specimens of fossils in Japan. vi+422 : Palaeontological Society of Japan.

Harris, E. J. & Sjodin, R. A. Kinetics of exchange and net movement of frog muscle potassium. J. Physiol. **155** : 221–245 9 figs.

Harris, J. P., Jr. The natural history of *Necturus*. IV. Reproduction. J. Graduate res. Centre **29** : 69–81.

Hartung, E. W. Studies on the homograft reaction in *Rana pipiens* utilizing C_{14} labeled glycine. Amer. Zool. **1** : 452. [Abst.]

Hartung, E. W. & Laflamme, C. J. Homograft studies of the developing limb bud area of tadpoles of *Rana pipiens*. Amer. Zool. **1** : 452. [Abst.]

Harvie, L. E. & Maroney, S. P., Jr. Respiration and hemolysis of ultraviolet irradiated frog erythrocytes. Virginia J. Sci. N.S. **12** : 1–9 2 figs.

Haslett, W. L. & Jenden, D. J. A comparative study of the effect of ryanodine on muscle. J. cell. comp. Physiol. **57** : 123–133 3 figs.

(1) Haubrich, R. Differential behaviour in the South African clawed toad *Xenopus laevis* Daudin. ASB Bull. **3** 1956 : 10. [Abst.]

(2) Haubrich, R. Hierarchical behaviour in the South African clawed frog *Xenopus laevis* Daudin. Anim. Behav. **9** : 71–76.

Hawes, J. Skull comparison of prehistoric vertebrates. J. Colo.—Wyom. Acad. Sci. **5** (2): 59–60.

Hawthorne, J. B. Field notes in Dorset. Rep. Dorset. nat. Hist. archaeol. Soc. **82** : 49.

Hay, E. D. Fine structure of differentiating muscle in developing myotomes of *Amblystoma opacum* larvae. Anat. Rec. **139** : 236. [Abst.]

Hay, E. D. & Fischman, D. A. Origin of the blastema in regenerating limbs of the newt *Triturus viridescens*. An autoradiographic study using tritiated thymidine to follow cell proliferation and migration. Developmental Biol. **3** : 26–59 16 figs.

(1) Heatwole, H. Habitat selection and activity of the wood frog, *Rana sylvatica* Le Conte. Amer. midl. Nat. **66** : 301–313 6 figs.

(2) Heatwole, H. Rates of desiccation and rehydration of eggs in a terrestrial salamander, *Plethodon cinereus*. Copeia **1961** : 110–112 1 fig.

Heatwole, H. & Lim, K. Relation of substrate moisture to absorption and loss of water by the salamander, *Plethodon cinereus*. Ecology **42** : 814–819 6 figs.

Heatwole, H. & Test, F. H. Cannibalism in the salamander *Plethodon cinereus*. Herpetologica **17** : 143.

Hecht, M. The history of the frogs. Anat. Rec. **138** 1960 : 356. [Abst.]

Hecht, M., Hoffstetter, R. & Vergnaud, C. Le gisement de vertébrés Miocènes de Beni Mellal (Maroc). Amphibiens. Notes Serv. Min. Maroc **155** : 103.

Helff, O. M. Regeneration and stability of lateral line organs in *Rana catesbeiana*. Anat. Rec. **139** : 306. [Abst.]

Heller, H. & Pickering, B. T. Neurohypophysial hormones of non-mammalian vertebrates. J. Physiol. **155** : 98–114 6 figs.

Henderson, G. G., Jr. Reproductive potential of *Microhyla olivacea*. Tex. J. Sci. **13** : 355–356.

Hennen, S. On the capacity of *Rana pipiens* nuclei to promote development in their own cytoplasm after replicating in *Rana esculenta* cytoplasm. Genetics **46** : 869–870. [Abst.]

(1) Herner, A. E. & Frieden, E. Biochemistry of anuran metamorphosis. VII. Changes in serum proteins during spontaneous and induced metamorphosis. J. Biol. Chem. **235** 1960 : 2845–2851 5 figs.

(2) Herner, A. E. & Frieden, E. Biochemical changes during anuran metamorphosis. VIII. Changes in the nature of red cell proteins. Arch. Biochem. & Biophys. **95** : 25–35 4 figs.

Hess, A. The effect of unilateral eye removal on the cholinesterase activity of the optic tectum of adult frogs. Anat. Rec. **140** : 295–305 8 figs.

Hester, M., see Goin, C. J.

Heusser, H. Die Bedeutung der äusseren Situation im Verhalten einiger Amphibienarten. Rev. suisse Zool. **68** : 1–39 11 figs. [English summary.]

Hibner-Owerko, A., see Cortelyou, J. R.

(1) Highton, R. *erythronota* (*Salamandra*) Rafinesque, 1818 ; proposed suppression under the Plenary Powers (Amphibia, Caudata). Bull. zool. Nom. **18** : 221–222.

(2) Highton, R. A new genus of lungless salamander from the coastal plain of Alabama. Copeia **1961** : 65–68 2 figs.

Highton, R. & Savage, T. Functions of the brooding behavior in the female red-backed salamander, *Plethodon cinereus*. Copeia **1961** : 95–98.

Hildemann, W. H. & Haas, R. Histocompatibility genetics of bullfrog populations. Evolution **15** : 267–271.

Hilfer, S. R., see Fawcett, D. W.

Himmelhoch, S. R. & Karnovsky, M. J. Oxidative and hydrolytic enzymes in the nephron of *Necturus maculosus*. Histochemical, biochemical, and electron microscopical studies. J. biophys. biochem. Cytol. **9** : 893–908 9 figs.

Hirschfeld, C. J. & Collins, J. T. Notes on Ohio herpetology. J. Ohio herpet. Soc. **3** (1) : 1–2.

Hisada, M. & Miyamoto, Y. Effects of reduction of calcium on electrical activities of muscle membrane. J. Fac. Sci. Hokkaido Univ. (Zool.) **14** : 536–543.

Hoffstetter, R., see Hecht, M.

Holan, T., see Russu, I. G.

(1) Holman, J. A. Amphibians and reptiles of the Howard College natural area. J. Ala. Acad. Sci. **32** : 77–87.

(2) Holman, J. A. A new hylid genus from the Lower Miocene of Florida. Copeia **1961** : 354–355 1 fig.

Honjo, I., see Oki, I.

Hooijer, D. A. The fossil vertebrates of Ksâr'Akil, a palaeolithic rock shelter in the Lebanon. Zool. Verh. No. 49 : 1–68 2 pls.

Horton, S. L., see Evans, E. E.

Hoshino, T. Histogenesis of the intestinal epithelium of anuran larvae (*Bufo vulgaris japonicus*) with reference to tissue iron. Okajimas Folia Anat. Jap. **37** : 105–121 2 pls.

Hoyt, D. L., see Duellman, W. E.

Hoyt, D. L., see Nelson, C. E.

Hubbs, C. & Armstrong, N. E. Minimum developmental temperature tolerance of two anurans, *Scaphiopus couchi* and *Microhyla olivacea*. Tex. J. Sci. **13** : 358–362.

Huf, E. G., see Campbell, A. D.

Hughes, A. Cell degeneration in the larval ventral horn of *Xenopus laevis* (Daudin). J. Embryol. exp. Morph. **9** : 269–284 3 figs. 1 pl.

Hughes, A. F. W. & Lewis, P. R. Effect of limb ablation on neurones in *Xenopus* larvae. Nature, Lond. **189** : 333–334 5 figs.

Hughes, A. F. W., see Lewis, P. R.

(1) Hughes, N. An investigation into the fertilizability of coel[o]mic and oviducal eggs of the newt, *Triturus viridescens*. ASB Bull. **4** 1957 : 13. [Abst.]

(2) Hughes, N. Hybridization and allotriploidy in *Triturus viridescens*. ASB Bull. **5** 1958 : 9. [Abst.]

Hughes, W. N. A study of hybridization and heteroploidy in two subspecies of *Triturus viridescens*. Diss. Abstr. **19** 1959 : 3059–3060.

Hughes, W. N., see Humphries, A. A.

Huheey, J. E. Mimicry in the color pattern of certain Appalachian salamanders. J. Elisha Mitchell sci. Soc. **76** 1960 : 246–251.

Huheey, J. E. & Brandon, R. A. Further notes on mimicry in salamanders. Herpetologica **17** : 63–64.

Humphrey, R. R. A chromosomal deletion in the Mexican axolotl (*Siredon mexicanum*) involving the nucleolar organizer and the gene for dark color. Amer. Zool. **1** : 361. [Abst.]

Humphrey, R. R., see Briggs, R.

(1) Humphries, A. A. Experimental removal of metaphase II inhibition in ova of the newt, *Triturus viridescens*. ASB Bull. **2** 1955 : 7. [Abst.]

(2) Humphries, A. A. A study of meiosis in coel[o]mic and oviducal oocytes of *Triturus viridescens*, with particular emphasis on the origin of spontaneous polyploidy and the effects of heat shock on the first meiotic division. ASB Bull. **3** 1956 : 11. [Abst.]

(3) Humphries, A. A. The oviducal environment and normal blockage of meiosis in oocytes of the newt, *Triturus viridescens*. ASB Bull. **5** 1958 : 10. [Abst.]

(4) Humphries, A. A. Experiments on the normal meiotic block in the ovum of *Triturus viridescens*. Biol. Bull., Woods Hole **120 :** 29–37 4 figs.

Humphries, A. A. & Hughes, W. N. Polysaccharide histochemistry of the oviduct of the newt, *Triturus viridescens*. ASB Bull. **6** 1959 : 25. [Abst.]

Humphries, A. A., Jr., see Lee, W. J.

Hunsaker, D., II, Alston, R. E., Blair, W. F. & Turner, B. L. A comparison of the ninhydrin positive and phenolic substances of paratoid gland secretions of certain *Bufo* species and their hybrids. Evolution **15 :** 352–359 7 figs.

Hunter, A. S. & Murcia de V., B. Reproducción de la rana *Hyla labialis*. I. La ovogenesis. Caldasia **8 :** 573–583 tables. [English summary.]

Hunter, A. S., see de Luque, O.

Hunter, F. R., see de Luque, O.

Husson, R. & Chaudonneret, J. Un cas remarquable d'albinisme chez la grenouille rousse (*Rana temporaria* L.) Ann. Univ. Saraviensis. Scient. **9 :** 229–234 1 pl.

Hutchinson, C. & Rodenhauser, P. C. The effect of augmented innervation on the growth and development of a limb blastema. Anat. Rec. **139 :** 308. [Abst.]

Hutchison, V. H. Critical thermal maxima in salamanders. Physiol. Zool. **34 :** 92–125 18 figs.

Idelman, S. Hyperplasie experimentale de la peau de la salamandre (*Salamandra maculosa*). Trav. Sect. Scient. tech. **1** 1959 : 129–135 4 figs. [English summary.]

Ikushima, N. Formation of notochord in an explant derived from the dorsal marginal zone of the early gastrula of Amphibia. Jap. J. Zool. **13 :** 117–139 14 figs.

Il'inskaya, N. B. Adaptation of the somatic musculature of the frog to the action of urea. Dokl. Akad. Nauk SSSR **133** 1960 : 722–725. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **133 :** 615–617 3 figs.]

Il'inskii, O. B. & Tertyshnik, N. T. Electronic analysis of the action of various narcotics on nerve of a frog. Dokl. Akad. Nauk SSSR **135** 1960 : 1005–1008. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **135 :** 968–971 2 figs.]

Inger, R. F. Living amphibians of the world. By D. M. Cochran. London (Hamish Hamilton) (Review). Copeia **1961 :** 501–502.

Inger, R. & Marx, H. The food of amphibians. Explor. Parc Nat. Upemba. Miss. de Witte. No. 64 : 1–86 1 fig.

Inger, R. F. & Menzies, J. I. A new species of toad (*Bufo*) from Sierra Leone. Fieldiana (Zool.) **39 :** 589–594.

Inger, R. F. & Romer, J. D. A new pelobatid frog of the genus *Megophrys* from Hong Kong. Fieldiana (Zool.) **39 :** 533–538 fig.

(1) Inoue, K. Serologically active groups of amphibian embryos. J. Embryol. exp. Morph. **9 :** 563–585.

(2) Inoue, K. Precipitin reactions and developmental arrest by antisera in amphibian embryos. Developmental Biol. **3 :** 657–683 tables.

Inoue, S. Effect of nerve fibers on mitotic activity in regenerating limit of adult newt, *Triturus pyrrhogaster*. Gunma J. med. Sci. **10 :** 192–200 4 figs. [Not seen.]

Ishikawa, M., see Eguchi, G.

Iturriza, F. C., see Prieto Díaz, H.

(1) Iwasawa, H. Effects of some steroid hormones on the gonads of *Rhacophorus* larvae. J. Fac. Sci. Niigata Univ. (2) **2** 1958 : 179–188 35 figs. 4 tables.

(2) Iwasawa, H. Peculiar response of toad larvae to thiourea treatment. Endocrinol., Japon **6** 1959 : 183–190 26 figs.

(3) Iwasawa, H. The effects of the mammalian hypophysis extract on the development of gonad in frog larvae. J. Fac. Sci. Niigata Univ. (2) **4** 1960 : 27–32 29 figs.

(4) Iwasawa, H. Comparative anatomy of the thyroid glands of Japanese frogs. Endocrinol., Japon **7** 1960 : 45–52 27 figs.

(5) Iwasawa, H. Inhibitory effect of para-hydroxypropiophenone on the development of gonad in thyroidectomized frog larvae. Endocrinol., Japon **7** 1960 : 181–186 17 figs.

(6) Iwasawa, H. Effects of thyroidectomy, hypophysectomy and thiourea treatment on the development of gonads in frog larvae. Jap. J. Zool. **13 :** 69–77 1 fig. 2 pls.

Iwasawa, H. & Asai, O. Histological observations on the seasonal change of the testis and the thumb pad in the frog, *Rana nigromaculata*. J. Fac. Sci. Niigata Univ. (2) **2** 1959 : 213–219 11 figs.

(1) Jacobson, A. G. Factors influencing the positioning of the placodal derivatives in the newt. Amer. Zool. **1 :** 453. [Abst.]

(2) Jacobson, A. G. Heart determination in the newt. J. exp. Zool. **146 :** 139–151 14 figs.

Jacobson, M. Recovery of electrical activity in the optic tectum of the frog during early regeneration of the optic nerve. Proc. R. phys. Soc. Edinb. **28 :** 131–137 3 figs.

Jaffee, O. C. On the morphogenesis of cardiac jelly and its role in the development of the heart. Amer. Zool. **1 :** 453–454. [Abst.]

Jakowska, S. Syncoelous parabiosis of adult newts, *Diemictylus viridescens*. Amer. Zool. **1 :** 454. [Abst.]

(1) Jakowska, S., Nigrelli, R. F. & Sparrow, A. H. Effects of chronic gamma irradiation on adult newts, *Diemictylus viridescens*. Amer. Zool. **1 :** 361–362. [Abst.]

(2) Jakowska, S., Nigrelli, R. F. & Sparrow, A. H. Additional radiobiological studies on normal and anemic newts, *Diemictylus viridescens*. Amer. Zool. **1 :** 454–455. [Abst.]

James, B. R. Breeding *Bufo melanisticus* [sic]. Aquarist & Pondkpr. **26** : 125 2 figs.

Jameson, D. L., see Valett, B. B.

Jansen, J. S. De boomkikker (*Hyla arborea*). Aquarium, Den Haag **32** : 56–58 2 photos.

Jard, S. & Morel, F. Inhibition compétitive de l'action antidiurétique de la lysine-vasotocine par l'ocytocine chez *Rana esculenta*. C.R. Acad. Sci. Paris **252** : 339–341.

Jarvik, E. Devonian Vertebrates. Calgary–Alberta Soc. Petr. Geol. Proc. 1st Internat. Symp. Arctic Geology Vol. 1 : 197–204 figs. University of Toronto Press.

Jaylet, A., see Beetschen, J.-C.

Jenden, D. J., see Haslett, W. L.

Jendrassik, L., see Bartha, T.

(1) Jitariu, P. & Alexa, E. Sur la morpho-physiologie des " loges " du ventricle unique de la grenouille *Rana ridibunda*. An. Sti. Univ. Iasi, N.S. Sect. II St. nat. **7** : 1–14 15 figs. [Title only **6** 1960 p. 562.]

(2) Jitariu, P. & Alexa, E. L'enregistrement des déplacements de la paroi ventriculaire du cœur de la grenouille *Rana ridibunda* par la méthode photo-mécanographique. An. Sti. Univ. Iasi. N.S. Sect. II St. nat. **7** : 15–26 9 pls.

Johnen, A. G. Experimentelle Untersuchungen über die Bedeutung des Zeitfaktors beim Vorgang der neuralen induktion. Roux Arch. Entw. Mech. Organ. **153** : 1–13 7 figs.

Johnson, E. R., see DeLanney, L. E.

Johnson, F. R., see Boyd, J. D.

Joly, J. Le cycle sexual biennal chez la femelle de *Salamandra salamandra quadri-virgata* dans les Hautes-Pyrénées. C.R. Acad. Sci. Paris **252** : 3145–3147 1 fig.

Joly, M., see Jullien, A.

Jones, A. W., Cheng, T. C. & Gillespie, R. F. A new *Ophiotaenia* from a frog. ASB Bull. **4** 1957 : 13. [Abst.]

Jordan, M., Development of regeneration blastemas implanted into the brain. Folia Biol., Cracov. **8** 1960 : 41–53.

Jørgensen, C. B. & Larsen, L. O. Molting and its hormonal control in toads. Gen. & Comp. Endocr. **1** : 145–153 8 figs.

Joubert, P. J. Contributions to the cranial morphology of *Pseudotriton ruber ruber* (Sonnini). Ann. Univ. Stellenbosch **36A** : 387–418 11 figs.

Jullien, A., Cardot, J., Joly, M. & Bride, M. Sur les rapports entre structure et fonctions envisagés dans le cas du cœur d'après la variabilité des temps nécessaires à l'obtention de l'arrêt de l'organe par une substance inhibitrice appliquée directement sur le myocarde. C.R. Soc. Biol. Paris **154** : 2321–2323.

Jullien, A., Cardot, J., Joly, M. & Petiau, A. Sur la perméabilité comparée du péricarde de Grenouille aux sels de calcium et sur ses modifications par l'action préalable des facteurs de diffusion. C.R. Soc. Biol. Paris **154** 1960 [1961] : 1807–1809.

Juszczyk, W. The development of the reproductive organs of the female common frog (*Rana temporaria* L.) in the yearly cycle. Ann. Univ. M. Curie Sklodowska **14C** : 169–231 4 figs. 17 tables. [English summary.]

Kakiuchi, Y., see Washio, H.

Kanazawa, K., see Shirai, T.

(1) Kanwar, K. C. Studies on the mucinogenesis in the goblet cells of frog and wall lizard, with particular reference to the morphology and histochemistry of cytoplasmic inclusions. Res. Bull. Panjab Univ. N.S. **12** (1–2) : 71–83 23 figs.

(2) Kanwar, K. C. Morphological and histochemical studies on the oxyntic cells of frog and rats. Cellule **61** : 221–240 1 pl.

Kapany, N. S., see Capellaro, D. F.

Kaplan, H. M. & Yoh, L. Toxicity of copper for frogs. Herpetologica **17** : 131–135.

Karnovsky, M. J., see Himmelhoch, S. R.

Karube, N., see Ogawa, Y.

Katagiri, C. On the fertilizability of the frog egg, I. J. Fac. Sci. Hokkaido Univ. (Zool.) **14** : 607–613.

Katz, B. The terminations of the afferent nerve fibre in the muscle spindle of the frog. Phil. Trans. **243B** (703) : 221–240 36 pls. 5 figs.

Katz, B. & Miledi, R. The localized action of " end plate drugs " in the twitch fibres of the frog. J. Physiol. **155** : 399–415 9 figs.

Katz, R. M. Quinaldine as an anesthetic on *Siredon mexicanum* (Shaw). Trans. Ky. Acad. Sci. **22** : 71–77 3 figs.

Kehl, R., Dumont, L., Czyba, J. C. & Germain, A. Action de la réserpine sur la métamorphose des têtards de *Rana temporaria*. C.R. Soc. Biol. Paris **154** 1960 [1961] : 1791–1795 3 figs.

Kelly, D. E., see Cintron, C.

Kelly, H. M., see Gordon, M. S.

(1) Kemp, N. E. Metamorphic changes in the basement lamella of the skin of frog larvae exposed to thyroxine. Anat. Rec. **139** : 245. [Abst.]

(2) Kemp, N. E. Replacement of the larval basement lamella by adult-type basement membrane in anuran skin during metamorphosis. Developmental Biol. **3** : 391–410 10 figs.

Kennedy, J. P., see Pyburn, W. F.

Kepka, O. & Schuster, R. Allgemeine faunistische Nachrichten aus Steiermark (VIII). Mitt. naturw. Ver. Steiermark **91** : 77–83.

Kernan, R. P. Stimulation of active transport of sodium from sodium-rich frog muscle by insulin and lactate. Nature, Lond. **190** : 347.

King, W. New populations of West Indian reptiles and amphibians in south eastern Florida. Quart. J. Fla. Acad. Sci. **23** 1960 : 71–73.

Kiortsis, V. Queues bifides chez le Triton. Arch. Sci. Genève **14** : 306–310 3 figs.

Kiortsis, V. & Droin, A. Le régénération caudale des urodèles (Induction et réactivité du territoire). J. Embryol. exp. Morph. **9** : 77–96 4 figs. 3 pls.

Kiortsis, V., see Rahmani, T.

Kirschner, L. B., see Alvarado, R. H.

Klappenbach, M. A. Notas herpetologicas. II. Hallazgo de *Trachycephalus siemersi* (Mertens) y *Phyllomedusa iheringi* Boulenger (Amphibia, Salientia), en el Uruguay. Comun. zool. Mus. Montevideo **5** (86) : 1–8 3 pls.

Kluge, A. G., see Savage, J. M.

Kluge, A. G., see Wake, D. B.

Knappeis, G. G., see Carlsen, F.

(1) Knoepffler, L.-P. Contribution à l'étude des amphibiens et des reptiles de Provence. I. Généralités. Vie et Milieu **12** : 67–76 3 figs.

(2) Knoepffler, L.-P. Contribution à l'étude des amphibiens et des reptiles de Provence. II. Généralités (2e note). Vie et Milieu **12** : 517–528.

(3) Knoepffler, L.-P. Les batraciens et principalement le genre *Discoglossus* dans les îles Méditerranéennes. Colloq. int. Centre nat. Rech. Sci. No. 94 : 159–161.

Kohl, I., see Stugren, B.

(1) Koketsu, K. & Miyamoto, S. Release of calcium-45 from frog nerves during electrical activity. Nature, Lond. **189** : 402–403 1 fig.

(2) Koketsu, K. & Miyamoto, S. Significance of membrane calcium in calcium-free and potassium-rich media. Nature, Lond. **189** : 403–404 1 fig.

Koller, O. Über entwicklungsmechanische Wirkungen von Novocain auf Molchlarven (*Triturus alpestris* Laur.). Zool. Anz. **167** : 245–254 8 figs.

Kollross, J. J. Mechanisms of amphibian metamorphosis : hormones. Amer. Zool. **1** : 107–114 1 fig.

Kollross, J. J., see Bovbjerg, A. M.

Kollross, J. J., see Pearson, C.

Koloss, E. I. The functional purpose of tonic myons in the lower vertebrates. Dokl. Akad. Nauk SSSR **134** 1960 : 445–448. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **134** : 760–764 3 figs.]

Kolstad, K., see Støp-Bowitz, C.

Komnick, H. Über Herkunft, Bedeutung und Schicksal der Melanocyten im Cerebralliquor von Krallenfroschlarven (*Xenopus laevis*). Roux Arch. Entw. Mech. Organ. **153** : 14–31 13 figs.

Krishnaswamy, S., see Cherian, A. G.

Krolenko, S. A., see Ushakov, B. P.

Krüger, G. Der Einfluss der Temperatur auf die Sauerstoffbindung des Froschblutes. Verh. dtsch. zool. Ges. **1960** : 80–83 2 figs.

Kucias, J. Einfluss der Futterarb auf die Entwicklungsgeschwindigkeit der Larven von *Xenopus laevis* Daud. Biol. Zbl. **80** (1) : 93–95.

(1) Kuhn, O. Ein Phyllospondyle aus dem deutschen Kupferschiefer. Neues Jb. Geol. Paläont. Monatshefte **1961** : 1–6 figs.

(2) Kuhn, O. Die Tier- und Pflanzenwelt des Solnhofener Schiefers. Mit vollständigem Arten- und Schriftenverzeichnis. Geol. bavar. **48** : 1–68 fig.

Kusakina, A. A. Temperature dependence of the cholinesterase activity reduction rate in liver homogenates of grass and lake frogs. Dokl. Akad. Nauk SSSR **139** : 1258–1261. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **139** : 710–712 3 figs.]

Kuusi, T. The archencephalic induction process in the light of tracer experiments. Arch. Soc. zool.-bot. fenn. Vanamo **15** (1–2) 1960 [1961] : 3–21 2 figs.

Kwiatkowski, C. Regeneration of transected nervous connections in the brain of metamorphosed *Xenopus laevis*. Folia biol., Kraków **9** : 27–41 15 figs.

(1) Lác, J. Verbreitung der Unken (Tiefland-Unke *Bombina bombina* L. und Berg-Unke *Bombina variegata* L.) in der Slowakei und Problematik deren gegenseitigen Kreuzung. Biol. Práce, Bratislava **7** (3–4) : 5–32 7 figs. tables. [German summary.]

(2) Lác, J. Amphibien aus dem Flussgebiet der Orava. Biol. Práce, Bratislava **7** (3–4) : 33–59 12 figs. [German summary.]

Ladosky, W. Farmacologia da pressão arterial na rã " *Leptodactylus ocellatus* ". Efeito inconstante da adrenalina. Rev. bras. Biol. **21** (1) : 49–59 4 figs. [English summary.]

Laflamme, C. J., see Hartung, E. W.

Łagan, M. Regeneration from implanted dissociated cells. II. Regenerates produced by dissociated cells derived from different organs. Folia biol. Kraków **9** : 3–26 16 figs.

Laguens, R. & Palatnik, M. Determinación sexual en el nucleo interfásico del *Bufo arenarum* Hensel. Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 205–220 4 figs.

Lakshman, A. B., see Ramaswami, L. S.

Lamotte, M. Contribution à l'étude des Batraciens de l'Ouest africain. XII. Les formes larvaires de *Cardioglossa leucomystax* Blgr. Bull. Inst. franç. Afr. noire **23A** : 211–216 5 figs.

Lamotte, M., Dzieduszycka, S. & Lauwarier, G. Contribution à l'étude des Batraciens de l'Ouest africain. VIII. Les formes larvaires de *Ptychadena submascareniensis, Pt. tournieri* et *Pt. trinodis*. Bull. Inst. franç. Afr. noire **20A** 1958 : 1464–1482 18 figs.

(1) Lamotte, M. & Perret, J.-L. Contribution à l'étude des Batraciens de l'Ouest africain. XI. Les formes larvaires de trois espèces de *Ptychadena* : *Pt. maccarthyensis* And., *Pt. perreti* G. et L. et *Pt. mascareniensis* D. et B. Bull. Inst. franç. Afr. noire **23A** : 192–210 15 figs.

(3) Lamotte, M. & Perret, J.-L. Contribution à l'étude des Batraciens de l'Ouest africain. XIII. Les formes larvaires de quelques espèces de *Leptopelis* : *L. aubryi*, *L. viridis*, *L. anchietae*, *L. ocellatus* et *L. calcaratus*. Bull. Inst. franç. Afr. noire **23A** : 855–885 30 figs.

(1) Lamotte, M. & Roy, R. La zonation de la faune au mont Nimba (Guinée). C.R. Acad. Sci. Paris **252** : 4040–4042 fig.

(2) Lamotte, M. & Roy, R. L'endémisme dans la faune orophile du mont Nimba (Guinée). C.R. Acad. Sci. Paris **252** : 4209–4210.

Lamotte, M., see Guibé, J.

Lanfri, C. M., see Madoery de Bonet, F. A.

Lang, C. A. & Grant, P. Respiratory enzyme changes during frog embryogenesis. Proc. nat. Acad. Sci. Wash. **47** : 1236–1244 4 figs.

Langman, J., see Maisel, H.

(1) Lanza, B. Esplorazioni speleologiche in Toscana. Le grotte di Bedizzano e di Ritomboli (Alpi Apuane) e la loro fauna. Universo **28** (5) 1948 : 529–539 4 figs.

(2) Lanza, B. Notizie e ricerche sul ciclo sessuale maschile degli anfibi europei in relazione al loro uso per la ricerca e il dosaggio delle gonadotrofine. Arch. Fisiol. **51** 1951 : 54–75, 127–149. [Recorded Z.R. 1952 as not seen.]

(3) Lanza, B. La fauna cavernicola della Toscana. Rass. Speleol. Ital. **13** (2) : 23–51 8 figs.

Lanza, B. & Marcucci, G. Note su alcune grotte della Toscana con Cenni sulla loro fauna. Rass. Speleol. Ital. **5** (2) 1953 : 50–58 6 figs.

Lanza, B., see Frassineti, A.

Lanzavecchia, G. The formation of the yolk in frog oocytes. Proc. Europ. reg. Conf. Electr. Microsc. Delft **2** 1960 [1961] : 746–749 4 figs.

Laplaud, J., Tricoche, R. & Gargouil, Y.-M. Électrogramme intracellulaire (E.I.C.), électrogramme externe et mécanogramme du cœur d'Axolotl (*Amblystoma tigrinum*). C.R. Soc. Biol. Paris **154** 1960 [1961] : 1608–1612 3 figs.

Laplaud, J., see Tricoche, R.

Lardy, H. & Lee, Y.-P. Cellular effects of the thyroid hormone in different organs and species. Amer. Zool. **1** : 457. [Abst.]

Larsen, L. O., see Jørgensen, C. B.

Lasansky, A. Morphological bases for a nursing role of glia in the toad retina. Electron microscope observations. J. biophys. biochem. Cytol. **11** : 237–243 4 figs.

Latimer, H. B., Roofe, P. G. & Feng, L. S. Weights and linear measurements of the body of some organs of the tiger salamander. Anat. Rec. **141** : 35–44. [*See also* Amer. Zool. **1** : 368. [Abst.]]

(1) Laurent, R. F. Notes on some South African amphibians. Publ. Univ. Elisabethville **1** : 197–209.

(2) Laurent, R. F. Étude d'une collection herpétologique du Mayombe. Première partie : Gymnophiones, Pipidae, Bufonidae et Astylosternidae. Rev. Zool. Bot. afr. **63** : 262–276.

(3) Laurent, R. F. Note sur les *Hyperolius* et quelques *Afrixalus* (Salientia) du Musée de Berlin. Rev. Zool. Bot. afr. **64** : 65–96.

Lautenschlager, E. W. Meningeal tumours of the newt, *Triturus viridescens*, as correlated with trematode infection of the brain and brain case. ASB Bull. **5** 1958 : 12. [Abst.]

Lauwarier, G., see Lamotte, M.

Ławiński, L. The effect of powdered pineal gland on the development of *Rana temporaria* L. and *Rana esculenta* L. larvae. Studia Soc. Sci. torun. **4** (2) 1958 : 29–40 4 tables.

Lebedkina, N. S. Development of the parasphenoid in the caudate Amphibia. Dokl. Akad. Nauk SSSR **133** 1960 : 1476–1479. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **133** : 539–542 2 figs.]

Lecuona, F. A. Substances azotées du sange de *Bufo paracnemis*. C.R. Soc. Biol. Paris **155** : 407.

Lee, W. J. & Humphries, A. A., Jr. An investigation of *in vitro* ovulation using the ovaries of *Triturus* (*Diemyctylus*) *viridescens*, with special emphasis upon the stage of maturation in the eggs released. Anat. Rec. **139** : 311. [Abst.]

Lee, Y.-P., see Lardy, H.

Leeson, C. R. & Threadgold, L. T. The differentiation of the epidermis in *Rana pipiens*. Acta anat. **44** : 159–173 14 figs.

Lehman, J.-P. Les Stégocéphales du Trias de Madagascar. Ann. Paléont. **47** : 109–154 20 pls. figs.

Lehmann, F. E., see Hahn, H. P. von.

Lenci, M. T., see Morel, F.

LePage, R., see Hackett, E.

Lerner, A. B., see Mori, W.

Lerner, A. B., see Wright, R. M.

Lester, R. & Schmid, R. Bile pigment excretions in Amphibia. Nature, Lond. **190** : 452.

Lettvin, J. Y., see Maturana, H. R.

Leutscher, A. Vivarium life, a manual on amphibians, reptiles and cold-water fish. (Second edition.) London (Cleaver-Hume Press Ltd.) : pp. 252 text-illust.

Lever, J. D., see Boyd, J. D.

Levine, L. Membrane activity of chronically denervated frog sartorius muscle fibres. J. cell. comp. Physiol. **58** : 141–151 2 figs.

Leviton, A. E. & Anderson, S. C. Further remarks on the amphibians and reptiles of Afghanistan. Wassman J. Biol. **19** : 269–276 1 fig.

Leviton, A., see Myers, G. S.

Levitt, G., see Etkin, W.

Lewis, E. J. C. & Frieden, E. Biochemistry of amphibian metamorphosis: effect of triiodothyronine, thyroxin, and dinitrophenol on the respiration of the tadpole. Endocrinology **65** 1959: 273–282 5 figs.

Lewis, P. R. & Hughes, A. F. W. Some effects of axon severance in cholinergic neurones of *Xenopus* larvae. J. Anat. Lond. **95**: 287. [Abst.]

Lewis, P. R., see Hughes, A. F. W.

Liem, K. F. On the taxonomic status and the granular patches of the Javanese frog *Rana chalconota* Schlegel. Herpetologica **17**: 69–71.

Lim, K., see Heatwole, H.

Limbosch-Rolin, S. & Brachet, J. Étude des effets du mercaptoethanol et du dithiodiglycol sur la division cellulaire chez les œufs d'amphibiens. Exp. Cell Res. **24**: 120–130 6 figs.

Lindgren, E. Natural history notes from Jigalong. V. Aboriginal flora and fauna names. W. Aust. Nat. **7**: 195–201.

Lindgren, E. & Main, A. R. Natural history notes from Jigalong. IV. Frogs. W. Aust. Nat. **7**: 193–195.

Lindsay, H. L., Jr., see Blair, A. P.

Lipetz, L. E. A mechanism of light adaptation. Science **133**: 639–640 1 fig.

(1) **Littlejohn, M. J.** Mating call discrimination by females of the spotted chorus frog (*Pseudacris clarki*). Tex. J. Sci. **13**: 49–50.

(2) **Littlejohn, M. J.** Artificial hybridization between some hylid frogs of the United States. Tex. J. Sci. **13**: 176–184.

(3) **Littlejohn, M. J.** Age and origin of some southwestern Australian species of *Crinia* (Anura: Leptodactylidae). *In* Blair, W. F., Vertebrate speciation. A University of Texas Symposium. Austin (University of Texas Press): 514–536.

(1) **Liotti, F. S.** Prime ricerche sull'influenza delle gibberellina sullo sviluppo embrionale negli anfibi. Riv. Biol. **54** (2): 155–169 3 figs. [English summary.]

(2) **Liotti, F. S.** Studio sperimentale in tema di antagonismo biologico tra cobalto e tiroxina. Riv. Biol. **54** (2): 235–250 1 fig. 2 graphs. [English summary.]

Liu, Y. H. A new species of *Rana* from Shansi. Vertebrata Palasiatica **1961**: 340–345 1 pl. [Chinese with English summary.]

Liversage, R. A. The relation of the central and autonomic nervous systems to the regeneration of limbs in larval and adult urodeles. Diss. Abstr. **19** 1959: 2412–2413.

Livezey, R. L. & Wyllie, G. A. Morphological variation between local populations of *Taricha granulosa* in Oregon. Amer. midl. Nat. **66**: 410–416.

Lobo, L. Some observations on the metamorphosis of the frog *Rana curtipes* Jerdon. Zoologica, N.Y. **46**: 103–104 1 fig. 1 pl.

Lobyntsev, K. S. On the question of postembryonic multiplication of muscle fibers. Dokl. Akad. Nauk SSSR **133** 1960: 1441–1443. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **133**: 570–573 2 figs.]

Logier, E. B. S. & Toner, G. C. Check list of the amphibians and reptiles of Canada and Alaska. A revision of Contribution No. 41. Contr. Life Sci. Div. R. Ont. Mus. No. 53: [ix] +92 77 maps.

Long, C., see Capellaro, D. F.

Long, J. M. & Guillemin, R. On the *in vitro* biossay for measuring melanophoretic activity. Experientia **17**: 132–134.

Lopashov, G. V. & Stroeva, O. G. Morphogenesis of the vertebrate eye. Advanc. Morphogenesis **1**: 331–377 5 figs.

Lorković, H. Inhibition by potassium of the mechanical responses of frog muscles at low temperature. Nature, Lond. **191**: 1011–1012 1 fig.

Loveridge, A. Status of new vertebrates described or collected by Loveridge. J. E. Afr. nat. Hist. Soc. **23** (7): 250–280.

Løvtrup, S. Morphological development and chemical differentiation during amphibian embryogenesis at low temperatures. J. exp. Zool. **147**: 227–232 10 figs.

Lupo, C., see Chieffi, G.

Lutz, B. Mating of *Hyla faber*. Nat. Hist. N. Y. **70** (1): 73–77 7 figs.

Lynn, W. G. Types of amphibian metamorphosis. Amer. Zool. **1**: 151–161 12 figs.

(1) **Lynn, W. G. & Dent, J. N.** Phenylthiourea and iodine binding in the tadpole. ASB Bull. **5** 1958: 13. [Abst.]

(2) **Lynn, W. G. & Dent, J. N.** A comparison of the responses of *Triturus* and *Desmognathus* to thyroid-stimulating hormone administration. Biol. Bull., Woods Hole **120**: 54–61 6 figs.

(1) **McAlister, W. H.** Artificial hybridization between *Rana a. areolata* and *Rana p. pipiens* from Texas. Tex. J. Sci. **13**: 423–426 1 fig.

(2) **McAlister, W. H.** The mechanics of sound production in North American *Bufo*. Copeia **1961**: 86–95 6 figs.

McCann, C. The introduced frogs of New Zealand. Tuatara **8**: 107–120 1 pl. 1 fig.

McCoy, C. J. A technique for collecting in urban areas. J. Ohio herpet. Soc. **3** (1): 4.

MacCallum, H. R., see Barton, A. J.

McCulloch, W. S., see Maturana, H. R.

McKenzie, K. G. Vertebrate localities in the Triassic Blina Shale of the Canning Basin, Western Australia. J. roy. Soc. W. Aust. **44**: 69–76 2 figs.

Mackerras, I. M., see Mackerras, M. J.

Mackerras, M. J. & I. M. The haematozoa of Australian frogs and fish. Aust. J. Zool. **9** (1): 123–139 3 pls.

McKinnell, R. G. Intraspecific nuclear transplantation in *Rana pipiens*. Amer. Zool. **1** : 371. [Abst.]

Madoery de Bonet, F. A., Chiaraviglio, E. & Lanfri, C. M. Aspectos del metabolismo hídrico en *Bufo arenarum* Hensel. Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 47–54 4 figs.

Maetz, J., see Morel, F.

Maillet, M., see Dollander, A.

Main, A. R. *Crinia insignifera* Moore (Anura : Leptodactylidae) on Rottnest Island. J. roy. Soc. W. Aust. **44** (1) : 10–13.

Main, A. R., see Lindgren, E.

Maisel, H. & Langman, J. Lens proteins in various tissues of the chick eye and in the lens of animals throughout the vertebrate series. Anat. Rec. **140** : 183–193 16 figs.

Majorov, V. N. On intra vitam observation of interneuronic connections in the urinary bladder of the frog, *Rana temporaria*. Izv. Akad. Nauk SSSR Sér. Biol. No. 5 1960 : 787–791 2 figs. [English summary.]

Malnate, E. V., see Chrapliwy, P. S.

Manaças, S. Notas herpetológicas—India Portuguesa. Mem. Jta Inv. Lisboa (2) **23** : 31–40 1 pl.

(1) **Manelli, H.** Sulla rigenerazione della coda nelle larve di Anfibi (*Axolotl*, *Bufo bufo* e *Rana esculenta*) soggette all'azione della clorotetraciclina. Arch. zool. (ital.) Napoli **45** 1960 [1961] : 109–124 5 figs. [English summary.]

(2) **Manelli, H.** Di alcune anomalie di sviluppo conseguenti all'azione di basse temperature su uova ed embrioni di *Rana esculenta* e *Bufo bufo*. R.C. Accad. Naz. XL (4) **12** : 159–182 6 pls. 1 fig.

Manelli, H. & Margaritora, F. Tavole cronologiche dello sviluppo di *Rana esculenta*. R.C. Accad. Naz. XL (4) **12** : 183–195 13 pls.

Mangold, O. Molchlarven ohne Zentral-nervensystem und ohne Ektomoesoderm. Roux Arch. Entw. Mech. Organ. **152** 1960 [1961] : 725–769 12 figs. [English summary.]

Manner, H. W., Donahue, J. K. & Connor, R. S. An histological study of the veins of *Rana pipiens*. Anat. Rec. **140** : 23–27 1 pl.

Manner, H. W., see Donahue, J. K.

Marcucci, G., see Lanza, B.

Marcuzzi, G. Supplemento alla "fauna delle Dolomiti" (aggiunte e commenti). Mem. Ist. Veneto. Cl. Sci. Mat. Nat. **32** (2) : 1–136 24 figs.

Marescaux, J., see Fabre, M.

Margaritora, F., see Manelli, H.

Margotta, V., see Marini, M.

Marini, M. Prime osservazioni sull'ulstrastruttura dell'epitelio branchiale in larve di Anfibi urodeli. R.C. Accad. Lincei (8) **29** : 448–452 1 pl.

Marini, M. & Margotta, V. Fenomeni riparativi e rigenerativi in segmenti di midollo spinale in condizioni di isolamento nell' adulto di un Anfibio urodelo. R.C. Accad. Lincei (8) **30** : 948–953 1 pl.

Maroney, S. P. Shape changes and hemolysis of frog erythrocytes following treatment with various hemolysins. ASB Bull. **7** 1960 : 34. [Abst.]

Maroney, S. P., Jr., see Harvie, L. E.

Martin, A. R. & Orkand, R. K. Postsynaptic effects of HC–3 at the neuromuscular junction of the frog. Canad. J. Biochem. & Phys. **39** : 343–349 5 figs.

Martin, S., see Cambar, R.

(1) **Martof, B. S.** Vocalization as an isolating mechanism in frogs. Amer. midl. Nat. **65** : 118–126 tables.

(2) **Martof, B. S.** Aberrant reproductive behavior in frogs. Herpetologica **17** : 66–67.

Marx, H., see Inger, R.

(1) **Masai, H.** Comparative neurobiological studies on the glycogen distribution in the central nervous system of submammals. Yokohama med. Bull. **12** : 239–260 10 pls. [Not seen.]

(2) **Masai, H.** Glycogen distribution in the subfornical organ of submammals. Yokohama med. Bull. **12** : 261–263 1 pl. [Not seen.]

Masai, H. & Matano, S. Comparative neurological studies on respiratory enzymic activity in the central nervous system of submammals. II. Fishes and Amphibia. Yokohama med. Bull. **12** : 271–276 2 pls. [Not seen.]

Massaro, E. J. The construction of permanent functional ileostomies and colostomies in adult frogs. Anat. Rec. **139** : 252. [Abst.] [*See also* J. exp. Zool. **146** : 131–138 2 figs. 2 pls.]

Masui, Y. Mesodermal and endodermal differentiation of the presumptive ectoderm of *Triturus* gastrula through influence of lithium ion. Experientia **17** : 458–459 5 figs.

Masur, M., see Etkin, W.

Matano, S., see Masai, H.

Matsumoto, A. Electron microscopical study on morphogenetic movement in *Triturus* embryo during earlier developmental stages. Zool. Mag., Tokyo **70** : 89–91 1 pl. [In Japanese, English summary.]

Matthews, S. A., see Weiss, A. B.

Maturana, H. R., Lettvin, J. Y., McCulloch, W. S. & Pitts, W. H. Anatomy and physiology of vision in the frog (*Rana pipiens*). J. Gen. Physiol. **43** no. 6 pt. 2 (July suppl.) 1960 : 129–175 2 pls. 11 figs.

Matveyev, B. S. On the dependence of the development of the vertebrate brain upon the developmental rate of the sense organs and the conditions of existence. Zool. Zh. **40** : 1778–1794 9 figs. [English summary.]

Mauro, A. & Adams, W. R. The structure of the sarcolemma of the frog skeletal muscle fiber. J. biophys. biochem. Cytol. **10** (pt. 2) : 177–185 7 figs.

(1) Mecham, J. S. Interspecific gene exchange between two southeastern tree frogs. ASB Bull. **5** 1958 : 13. [Abst.]

(2) Mecham, J. S. Natural hybridization between the tree frogs *Hyla versicolor* and *Hyla avivoca*. J. Elisha Mitchell sci. Soc. **76** 1960 : 64–67 fig.

(3) Mecham, J. S. Isolating mechanisms in anuran amphibians. *In* Blair, W. F., Vertebrate speciation. A University of Texas Symposium. Austin (University of Texas Press) : 24–61.

(1) Medvedeva, I. M. Origin of choanas in Amphibia. Dokl. Akad. Nauk SSSR **137** : 468–471. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **137** : 246–249 4 figs.]

(2) Medvedeva, I. M. Some data on the early development of lateral lines in the head of Hynobiidae. Dokl. Akad. Nauk SSSR **139** : 748–751. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **139** : 610–612 1 fig.]

Meeuwen, H. M. v. Excursie naar de Hautes Fagnes. Lacerta **19** : 45–46 2 photos.

Meisner, H. M. The effect of propylthiouracil on oxygen consumption and radioiodine metabolism of the frog, *Rana pipiens*, in winter. Amer. Zool. **1** : 372. [Abst.]

Melville, R. V., see Stoll, N. R.

Menzies, J. I., see Inger, R. F.

(1) Mertens, R. Relationships of animal geography between Australia and other continents. Geog. Rundschau **13** (3) : 99–105.

(2) Mertens, R. Tier und Landschaft. Zoologische Unterlagen zur Landschaftskunde. Frankfurter Geographischen **37** Festschrift 125 yr Frankfurter Geog. Gesellschaft 1836–1961, F.a.M. : 31–85 30 pls. 1 col. pl.

(3) Mertens, R. Die Amphibien und Reptilien der Insel Korfu. Senck. biol. **42** (1–2) : 1–29 1 fig.

Metter, D. E. Water levels as an environmental factor in the breeding season of *Bufo boreas boreas* (Baird & Girard). Copeia **1961** : 488.

Metuzals, J. Ultrastructure of myelinated nerve fibers and nodes of Ranvier in the central nervous system of the frog. Proc. Europ. reg. Conf. Electr. Microsc. Delft **2** 1960 [1961] : 799–802 2 figs.

Michael, M. I. The adult morphology of the olfactory organs of the Egyptian toad, *Bufo regularis* Reuss. J. Morph. **109** : 1–17 16 figs.

Michael, M. I. & Faber, J. The self-differentiation of the paddle-shaped limb regenerate, transplanted with normal and reversed proximo-distal orientation after removal of the digital plate (*Ambystoma mexicanum*). Arch. Biol., Paris **72** : 301–330 4 figs. 1 pl.

(1) Michałowski, J. The bombinators of the Kraków–Chrzanów Ridge and the adjacent part of the River Wisła valley. Acta zool. cracov. **5** 1960 [1961] : 699–714 2 maps.

(2) Michałowski, J. Studies on species characters in *Bombina variegata* (L.) and *Bombina bombina* (L.). 1. Applying the L : T indicator to the classifying purposes. Acta zool. cracov. **6** : 51–59.

Mielcarek, J. E. Effective fluorochroming of supravital nerve preparations. Trans. Amer. micr. Soc. **80** : 63–70 6 figs. tables.

Mihail, N. & Asandei, A. Stimulation of growth in tadpoles by feeding them with snails. Naturwissenschaften **48** : 486–487 1 fig.

Milaire, J. Les effets de la succion de l'un des deux premiers blastomères de l'œuf de grenouille (*Rana temporaria* et *Rana esculenta*). J. Embryol. exp. Morph. **9** : 586–598 2 pls.

Miledi, R., see Katz, B.

Miller, M. R. Carbohydrate metabolism in amphibians and reptiles. *In* Martin, A. W., Comparative physiology of carbohydrate metabolism in heterothermic animals. Seattle (University of Washington Press) : 125–145 2 pls.

Miller, M. R., see Wurster, D. H.

Mills, H. B. The Amphibians and Reptiles of Illinois by Philip W. Smith. Bull. Ill. nat. Hist. Surv. **28** pp. 1–298. [Review.] Bull. Philad. Herp. Soc. **9** (5) : 23.

Mindou, C., see Vancea, S.

Miyamoto, S., see Koketsu, K.

Miyamoto, Y., see Hisada, M.

Mizell, M. Induction of limb regeneration in post-metamorphic frogs by xenoplastic adrenal transplants. ASB Bull. **7** 1960 : 35. [Abst.]

Mizell, S. Seasonal changes in blood glucose, liver glycogen, gastric mucosal glycogen and fat body, gonad and pancreas weights in *Rana pipiens*. Anat. Rec. **139** : 255. [Abst.]

Młynarski, M. Amphibians from the Pliocene of Poland. Acta palaeont. polon. **6** : 261–282 figs. [Polish original with English summary.]

Molina, A. F. de, see Fernandez de Molina, A.

Mondal, A., see Basu, S. L.

Monnereau, H., see Tricoche, R.

Moore, H. J. The seasonal movement of toads (*Bufo bufo*). Anim. Behav. **9** : 235–236.

(1) Moore, J. A. A cellular basis for genetic isolation. *In* Blair, W. F., Vertebrate speciation. A University of Texas Symposium. Austin (University of Texas Press) : 62–68.

(2) Moore, J. A. The frogs of eastern New South Wales. Bull. Amer. Mus. nat. Hist. **121** : 149–386 20 pls. 74 figs.

Morel, F., Maetz, J., Acher, R., Chauvet, J. & Lenci, M. T. A "natriferic" principle other than arginine-vasotocin in the frog neurohypophysis. Nature, Lond. **190** : 828–829 1 fig.

Morel, F., see Jard, S.

Moretti, M. T., see Bertolini, B.

Mori, W. & Lerner, A. B. A microscopic bioassay for melatonin. Endocrinology **67** 1960 : 443–450 5 figs.

Moriya, K. Occurrence of the natural hybrid between *Rana nigromaculata nigromaculata* and *R. n. brevipoda* in Okayama district. Bull. School Educ. Okayama Univ. **8** 1959 : 84–93. [Not seen.]

Morris, P. A., see Yalden, D. W.

Muir, A. R. Observations on the attachment of myofibrils to the sarcolemma at the muscle–tendon junction. *In* Boyd, J. D., Johnson, F. R. & Lever, J. D., Electron microscopy in anatomy. London (Edward Arnold) : 267–277 10 figs.

Mukherji, M., see Deb, C.

Mulroy, J., see Cortelyou, J. R.

Murcia, de V., B., see Hunter, A. S.

Murphy, T. D. Predation on eggs of the salamander, *Ambystoma maculatum*, by caddisfly larvae. Copeia **1961** : 495–496.

Muscatello, U., Andersson-Cedergren, E., Azzone, G. F. & Decken, A. von der. The sarcotubular system of frog skeletal muscle. A morphological and biochemical study. J. biophys. biochem. Cytol. **10** (pt. 2) : 201–218 10 figs.

Musialek, B. The effect of population density on the growth and development of the tadpoles of some Anura. Zeszyty Nauk Uniw. Jagiellonsk. Práce (Zool.) **4** (23) 1959 : 59–87. [Not seen.]

Muzii, E. & Caravita, S. Osservazioni sul ricambio interstiziale nel tessuto osseo a fibre intrecciate di *Bufo bufo* (L.). R.C. Accad. Lincei (8) **31** : 80–85 1 pl.

Myers, G. S. & Leviton, A. The South American hylid frog names *Sphaenorhynchus*, *Dryomelictes*, and *Sphoenohyla*. Herpetologica **17** : 61–62.

Nakamura, O., see Tahara, Y.

Napp, M. Role of melanoblasts in the development of epidermal melanophores in *Amblystoma punctatum* larvae. Diss Abstr. **19** 1959 : 3423–3424.

Nasledov, G. A. Effect of sympathetic innervation on frog striated muscle potentials. Dokl. Akad. Nauk SSSR **139** : 1498–1501. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **139** : 722–724 3 figs.]

Neal, R. R., Jr., see DeLanney, L. E.

Nedermeijer, J. *Hyla regilla*. Lacerta **19** : [cover photo.].

Neifakh, A. A. A radiation study of morphogenetic functions of the nucleus during the early development of anurans. Dokl. Akad. Nauk SSSR **136** : 1248–1251. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **136** : 41–44.]

Neill, W. T. & Allen, R. Further studies on the herpetology of British Honduras. Herpetologica **17** : 37–52 5 figs.

Nelson, C. E. & Hoyt, D. L. New Central American records for *Rhinophrynus dorsalis*. Herpetologica **17** : 216.

Newcomer, R. J. Investigations into the status of *Gyrinophilus lutescens* (Rafinesque). ASB Bull. **8** : 21. [Abst.]

Newman, R. H., Grieg, A. B. & Smith, P. J. H. Amphibia [Report.] Rep. Oundle Sch. nat. Hist. Soc. **1961** : 13.

Niaussat, Mme., see Niaussat, P.

Niaussat, P. & Mme. Action de la sérotonine (5-hydroxytryptamine) sur la métamorphose des amphibiens. P.V. Soc. Sci. Bordeaux **1959–60** [1961] : 115–125 4 figs.

Niehus, B., see Hahn, H. P. von.

Nigrelli, R. F., see Jakowska, S.

Nonaka, T., see Shirai, T.

Novales, R. R. The role of ionic factors in hormone action on the vertebrate melanophore. Amer. Zool. **1** : 465. [Abst.]

Obst, F. J., see Fritzsche, J.

O'Dell, R. M. & Schmidt-Nielsen, B. Retention of urea by frog and mammalian kidney slices *in vitro*. J. cell. comp. Physiol. **57** : 211–219 3 figs.

(1) Ogawa, Y. Two factors influencing sensitivity to X-rays in the synthesis of actin during early embryonal stages. Rep. nat. Inst. Genet. No. 11 1960 [1961] : 37–38 1 fig.

(2) Ogawa, Y. Biochemical relation between the syntheses of actin and myosin in the regenerating limb tissue of *Triturus*. Rep. nat. Inst. Genet. No. 11 1960 [1961] : 38–39 1 fig.

Ogawa, Y. & Karube, N. Effects of glucuronic acid and related compounds on the synthesis of skeletal muscle proteins in early *Triturus* embryo. Rep. nat. Inst. Genet. No. 11 1960 [1961] : 40.

Okada, F. A histochemical study of the kidney of a Japanese frog. Okajimas Folia Anat. Jap. **37** : 421–429 2 pls.

Oki, I. & Honjo, I. Studies on the phosphate transport with relation to the retinal photoreception. III. Effects of metabolic inhibitors and narcotics on the ^{32}P-outflux. Jap. J. Zool. **13** : 239–248 3 figs.

Oksche, A. Optico-vegetative regulatory mechanisms of the diencephalon. Anat. Anz. **108** 1960 : 320–329 8 figs.

Olson, E. C. Jaw mechanisms : rhipidistians, amphibians, reptiles. Amer. Zool. **1** : 205–215 7 figs.

(1) Organ, J. A. Life history of the pigmy salamander *Desmognathus wrighti*, in Virginia. Amer. midl Nat. **66** : 384–390 2 figs.

(2) Organ, J. A. Studies of the local distribution, life history, and population dynamics of the salamander genus *Desmognathus* in Virginia. Ecol. Monogr. **31** (2) : 189–220 8 figs.

(3) Organ, J. A. The eggs and young of the spring salamander, *Pseudotriton porphyriticus*. Herpetologica **17** : 53–56 1 fig.

Orkand, R. K., see Martin, A. R.

Orlov, J. A. The world of ancient animals. Outline of the palaeontology of vertebrates : 1–190 figs. Moscow. [In Russian.]

Ortiz, E., see Candelas, G. C.

Ortman, R. & Fallon, K. Localization of acid and alkaline phosphatase in the pituitary of *Rana catesbeiana* and *Rana pipiens*. Amer. Zool. **1** : 466. [Abst.]

(1) O'Steen, W. K. Regeneration of the intestine in adult amphibians. Diss. Abstr. **19** 1959 : 2694–2695.

(2) O'Steen, W. K. Non-random distribution of radioactive cells during regeneration of the adult newt intestine. Anat. Rec. **139 :** 261. [Abst.]

O'Steen, W. K. & Walker, B. E. Radioautographic studies of regeneration in the common newt. II. Regeneration of the forelimb. Anat. Rec. **139 :** 547–555 1 pl.

(1) Ostrovsky, M. A. Activity of succinic dehydrogenase in the frog retina and the effect of light on said activity. Zh. Obshch. Biol. **22 :** 471–474 2 figs. [English summary.]

(2) Ostrovsky, M. A. Acetylcholinesterase location in the frog retina. Zh. Obshch. Biol. **22 :** 474–477 3 figs. [English summary.]

Overton, J., see Freeman, G.

Packard, R. L., see Webb, R. G.

Packer, W. C. Feeding behavior in adult *Taricha*. Copeia **1961 :** 351–352.

Padilla, M., see Funes, J. M. de.

Paik, W. K. & Cohen, P. P. Biochemical studies on amphibian metamorphosis. I. The effect of thyroxine on protein synthesis in the tadpole. J. Gen. Physiol. **43** 1960 : 683–696 9 figs.

Palatnik, M., see Laguens, R.

Palmer, W. H. & Whitehead, D. E. Herpetological collections and observations in Hyde and Tyrrell Counties, North Carolina. J. Elisha Mitchell sci. Soc. **77 :** 280–289 1 fig.

Panchen, A. L. & Walker, A. D. British coal measure labyrinthodont localities. Ann. Mag. nat. Hist. (13) **3** 1960 [1961] : 321–332.

Parakkal, P. F. & Ellis, R. A. A study of thumb pad in *Rana pipiens*. Anat. Rec. **139 :** 316. [Abst.]

Pashkova, I. M. & Sudarev, O. N. The effects of temperature on lake frogs (*Rana ridibunda* Pall.) under natural and experimental conditions. Dokl. Akad. Nauk SSSR **135** 1960 : 1512–1515. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **135 :** 877–879 1 fig.]

Pasteur, G. Présence au Maroc d'un étrange Discoglossidé. C.R. Soc. Sci. nat. Maroc **27 :** 21.

Patton, J. R., see Teague, R. S.

Pauschinger, P. & Brecht, K. Influence of calcium on the potassium-contracture of " slow " and " fast " skeletal muscle fibres of the frog. Nature, Lond. **189 :** 583–584 1 fig.

Peabody, F. E. Annual growth zones in living and fossil vertebrates. J. Morph. **108 :** 11–62 69 figs.

Pearson, C. & Kollross, J. J. Spinal cord response to amputation of the hind limb in larval *Pseudacris*. Amer. Zool. **1 :** 466. [Abst.]

Perassi, N. L. Action du glucagon ou de l'insuline sur la libération ou la captation de glucose par le foie isolé de Crapaud. C.R. Soc. Biol. Paris **155 :** 406–407.

Perret, J.-L. Études herpetologiques africaines. III. Bull. Soc. neuchâtel. Sci. nat. (3) **84 :** 133–138 1 pl.

Perret, J.-L., see Lamotte, M.

Peters, A. The development of peripheral nerves in *Xenopus laevis*. *In* Boyd, J. D., Johnson, F. R. & Lever, J. D., Electron microscopy in anatomy. London (Edward Arnold) : 142–159 18 figs.

Peters, J. A. Career opportunities for the herpetologist. [Prepared for the American Society of Ichthyologists and Herpetologists.] [4 pp.]

Petiau, A., see Jullien, A.

Petrucci, D. QR ed incorporazione di $C^{14}O_2$ nel corso dello sviluppo embrionale di *Bufo bufo*. Riv. Biol. **54** (3) : 339–354 3 figs. [English summary.]

Petzold, H.-G., see Freytag, G. E.

Peyrot, A. La vascularisation de l'hypophyse du triton crêté (*Triturus cristatus carnifex* Laur.) en conditions normales et après interruption de ses connexions avec l'hypothalamus. Arch. Anat. micr. Morph. exp. **49** 1960 [1961] : 411–429 12 figs.

Pflugfelder, O. Weitere Untersuchungen über die Thyreostatische Wirkung von Kaliumperchlorate bei Amphibien. Roux Arch. Entw. Mech. Organ. **153 :** 236–254 22 figs.

Phillips, C. Skin diving frogs. Aquar. J. **32 :** 590–592 3 figs.

Pickering, B. T., see Heller, H.

Pienaar, U. de V. A supplementary check-list of Decapoda, fresh-water fish, Amphibia, reptiles and small mammals recorded in the Kruger National Park. Koedoe No. 4 : 167–177.

(1) Pietsch, P. Effects of X-rays on regenerating limb and tail blastemata. Amer. Zool. **1 :** 379–380. [Abst.]

(2) Pietsch, P. Differentiation in regeneration. I. The development of muscle and cartilage following deplantation of regenerating limb blastemata of *Amblystoma* larvae. Developmental Biol. **3 :** 255–264 6 figs.

(3) Pietsch, P. The effects of heterotopic musculature on myogenesis during limb regeneration in *Amblystoma* larvae. Anat. Rec. **141 :** 295–303 8 figs.

Pisanó, A. & Pizarro, N. Acción del propionato de testosterona sobre la gonada de *Pleurodema nebulosa* en desarrollo. Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 63–73 4 figs.

Pitts, W. H., see Maturana, H. R.

Pizarro, N., see Pisanó, A.

Poczopko, P. The influence of the atmosphere enriched in CO_2 and in O_2 on the skin capillaries of the edible frog (*Rana esculenta* L.). Studia Soc. Sci. torun. **4** (1) 1958 : 1–28 1 fig. tables.

Polezhaev, L. V., Teplits, N. A. & Ermakova, N. I. Restoration of the regenerative property of extremities in axolotls inhibited by X-ray irradiation, by means of proteins, nucleic acids and lyophilized tissues. Dokl. Akad. Nauk SSSR **138 :** 477–480. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **138 :** 407–410 5 figs.]

Popov, V. V., see Borsuk, R. A.

Popovici, N., see Stugren, B.

Pora, E. A. & Ghircoiaşiu, M. La répartition et l'élimination de Ca^{45} chez *Triturus cristatus* L. An. Sti. Univ. Iasi, N.S. Sect. II, St. nat. **6** (suppl.) 1960 : 529–532 1 fig. [French summary.]

Porta, J. de. Algunos problemas estratigráfico-faunísticos de los Vertebrados en Colombia (con una bibliografiá comentada). Bol. geol. Univ. indust. Santander **7** : 83–104 figs.

Porter, K. R. Experimental crosses between *Rana aurora aurora* Baird and *Rana cascadae* Slater. Herpetologica **17** : 156–165 1 fig.

(1) Poynton, J. C. Contribution to the zoogeography of Southern Africa. S. Afr. J. Sci. **57** : 75–80.

(2) Poynton, J. C. Biogeography of south-east Africa. Nature, Lond. **189** : 801–803.

Prieto Díaz, H. E., Gómez Dumm, C. L. A. & Iturriza, F. C. Aspectos histoquímicos de la piel de *Bufo arenarum* Hensel. Actas Trab. I Congr. sudamer. Zool. 1959 : **5** 1960 [1961] : 259–266 12 figs.

Prieto Díaz, H., Iturriza, F. C. & Gómez Dumm, C. L. A. Estudio citológico de la hipofisis del *Bufo arenarum* Hensel. Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 239–250 11 figs.

(1) Prieto Díaz, H. & Tucci de Gorini, L. C. Las células insulares solitarias del pancreas de los anfibios. Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 221–226 3 figs.

(2) Prieto Díaz, H. & Tucci de Gorini, L. C. Estudio histoquímico del órgano de Bidder del *Bufo arenarum* Hensel. Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 227–238 3 figs.

Pryor, M. Z. & Tipton, S. R. The influence of certain factors on the respiratory metabolism of Amphibia. ASB Bull. **8** : 26. [Abst.]

(1) Pyburn, W. F. The inheritance and distribution of vertebral stripe color in the cricket frog. *In* Blair, W. F., Vertebrate speciation. A University of Texas Symposium. Austin (University of Texas Press) : 235–261 4 figs.

(2) Pyburn, W. F. Inheritance of the green vertebral stripe in *Acris crepitans*. Sthwest. Nat. **6** : 164–167.

Pyburn, W. F. & Kennedy, J. P. Hybridization in U.S. treefrogs of the genus *Hyla*. Proc. biol. Soc. Wash. **74** : 157–160.

Pyle, E. A., see Wolf, K.

Quay, T. L., see DePoe, C. E.

Quertier, I., see Brachet, J.

Quimby, M. C., see Wolf, K.

Rabb, G. The Surinam toad. Nat. Hist. N.Y. **70** (5) : 40–45 16 figs.

(1) Radice, J. C. Absorción y acumulacion de la vitamina A_1 en batracios (microscopía fluorescente). Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 75–79 7 figs.

(2) Radice, J. C. Stractum cribosum de Katschenko en batracios vernáculos. Microscopía fluorescente a 3·650 U.A. Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 266–271 2 figs.

Radovanović, M. Neue Fundorte neotenischer Bergmolche in Jugoslawien. Zool. Anz. **166** : 206–218 8 figs.

Rădulescu, M., see Stugren, B.

Rafferty, K. A., Jr. & Rafferty, N. S. High incidences of transmissible kidney tumors in uninoculated frogs maintained in a laboratory. Science **133** : 702–703.

(1) Rafferty, N. S. Fate of implanted embryos in frog eyes. J. exp. Zool. **147** : 33–41 12 figs.

(2) Rafferty, N. S. A study of the relationship between the pronephros and the haploid syndrome in frog larvae. J. Morph. **108** : 203–217 3 pls. 2 figs.

(3) Rafferty, N. S. Homologous implantations of embryos into adult frogs. Amer. Zool. **1** : 381. [Abst.]

Rafferty, N. S., see Rafferty, K. A., Jr.

Rahmani, T. & Kiortsis, V. Le rôle de la peau et des tissus profonds dans la régéneration de la patte. Rev. suisse Zool. **68** : 91–102 4 figs.

Rakeewa, M. T. Beiträge zur Evolutionsmorphologie der feineren Vaskularisation des Rückenmarks bei Wirbeltieren. I. Mitteilung. Die feinere Vaskularisation des Rückenmarks bei Amphibien (*Rana ridibunda*). Anat. Anz. **110** : 1–6 5 figs.

Ramaswami, L. S. & Lakshman, A. B. Action of mammalian hormones on hypophysectomized skipper frog. Endocrinol., Japon **7** 1960 : 39–44.

Ranzi, S., Citterio, P. & Samuelli, C. Molecular ontogenesis and molecular genetics in the crosses of toads. Experientia **17** : 16–17.

(1) Raunich, L. Isolamento di due chetosteroidi di probabile natura fenolica da Anfibi Anuri. Ann. Univ. Ferrara N.S. Sez. 13 Anat. Fis. comp. **1** (1) 1956 : 1–10 4 figs. [English summary.]

(2) Raunich, L. Effetti del benzochinone sopra la rigenerazione della coda del girini di Anfibi Anuri. Ann. Univ. Ferrara. N.S. Sez. 13 Anat. Fis. comp. **1** (2) 1957 : 11–23. [English summary.]

(3) Raunich, L. Potenza morfogenetica del mesoderma laterale allo stadio di bottone codale in *Rana esculenta*. Ann. Univ. Ferrara. N.S. Sez. 13 Anat. Fis. comp. **1** (3) 1957 : 25–43 8 figs. [English summary.]

(4) Raunich, L. Sul comportamento di trapianti di cercine neurale di Anfibi Anuri. Ann. Univ. Ferrara. N.S. Sez. 13 Anat. Fis. comp. **1** (4) 1957 : 45–58 8 figs. [English summary.]

(5) Raunich, L. Comportamento del materiale del cercine neurale di Anfibi Anuri in condizioni di espianto. Ann. Univ. Ferrara. N.S. Sez. 13 Anat. Fis. comp. **1** (5) 1958 : 59–62 1 fig. [English summary.]

(6) Raunich, L. Trapianti di cercine neurale in girini differenziati di Anfibi Anuri. Ann. Univ. Ferrara. N.S. Sez. 13 Anat. Fis. comp. **1** (6) 1958 : 63–75 9 figs. [English summary.]

(7) Raunich, L. Sopra la presenza del p-idrossibenzalacetone in estratti di Anfibi Anuri (*Rana esculenta*). R.C. Accad. Bologna (11) **7** (2) 1960 : 5–11 3 figs.

(8) Raunich, L. Sopra la presenza di sostanze di natura debolmente acida in embrioni di *Bufo vulgaris*. R.C. Accad. Bologna (11) **8** (1) : 16–20 1 fig.

Reichenbach-Klinke, H. H. Krankheiten der Amphibien. Stuttgart (Gustav Fischer Verlag) : pp. viii + 100 text-illust.

(1) Reig, O. A. Primeros datos descriptivos sobre los anuros del Eocretáceo de la provincia de Salta (Rep. Argentina). Ameghiniana **1** (4) 1959 : 3–7 2 figs.

(2) Reig, O. A. Noticia sobre un nuevo anuro fósil del Jurásico de Santa Cruz (Patagonia). Ameghiniana **2** (5) : 73–78 1 fig.

(3) Reig, O. A. Lineamientos generales de la historia zoogeográfica de los anuros. Actas Trab. I Congr. sudamer. Zool. 1959 **1** 1960 [1961] : 271–278.

(4) Reig, O. A. Las relaciones genéricas del anuro chileno *Calyptocephalella gayi* (Dum. & Bibr.). Actas Trab. I Congr. sudamer. Zool. 1959 **4** 1960 [1961] : 113–131 5 figs. [English summary.]

(5) Reig, O. A. La anatomía esquelética del género *Lepidobatrachus* (Anura, Leptodactylidae), comparada con la de otros ceratofrinos. Actas Trab. I Congr. sudamer. Zool. 1959 **4** 1960 [1961] : 133–147 7 figs. [English summary.]

Reijst, A. T. Aziatische salamanders in gevangenschap. Lacerta **19** : 35–36 fig.

Rémy, C., see Bounhiol, J.-J.

Reyer, R. W. Lens regeneration from intraocular, iris implants in the presence of the host lens. Anat. Rec. **139** : 267. [Abst.]

Reynolds, A. E. A postfemoral spot in *Plethodon*. Proc. Ind. Acad. Sci. **70** : 278–284 2 figs.

Rhodes, R. H. & Dalton, H. C. Development of cells in differentiating urodele pituitaries showing RNA and alkaline phosphatase characteristics associated with the beginning of secretion. J. Morph. **109** : 269–278 4 figs.

Richmond, N. D. Check list of the amphibians and reptiles of Canada and Alaska. By E. B. S. Logier & G. C. Toner (Review). Copeia **1961** : 507–508.

Rickenbacher, J. Über die Beeinflussung des Nukleinsäurestoffwechsels bei Amphibien- und Hühnerkeimen durch Sexualhormone. Roux Arch. Entw. Mech. Organ. **153** : 419–433 5 figs.

Riley, N. D., see Stoll, N. R.

Rivero, J. A. Salientia of Venezuela. Bull. Mus. comp. Zool. Harv. **126** : 3–207 1 pl. 13 text-figs.

Robinson, D. C. The identity of the tadpole of *Anotheca coronata* (Stejneger). Copeia **1961** : 495.

Rodenhauser, P. C., see Hutchinson, C.

(1) Rodriguez-López, M. I. La testosterona en los primeros estadios del desarrollo embrionario de *Rana esculenta* L. Bol. Soc. esp. Hist. nat. Secc. Biol. **59** : 215–218. [English summary.]

(2) Rodriguez-López, M. Acción del ácido 2-4, diclorofenoxiacético y su sal sódica sobre el espermatozoo de rana. Consideraciones sobre el pH en trabajos de biología celular. Bol. Soc. esp. Hist. nat. Secc. Biol. **59** : 219–226 1 fig.

Rogers, K. T. Failure of 2-thio-5-methyl-cytosine to counteract LiCl in vertebrate embryos. J. exp. Zool. **146** : 1–4.

Roguski, H. Regeneration from implanted dissociated cells. III. Regenerative capacity of blastemal cells. Folia biol., Kraków **9** : 269–302 22 figs.

Roig, V. G., see Cei, J. M.

Romanovský, A., see Štefanová, Z.

Romer, A. S. Palaeozoological evidence of climate. (1) Vertebrates. *In* Nairn, A. E. M., Descriptive Palaeoclimatology. Interscience Publishers Inc., New York & London : 183–206.

Romer, J. D., see Inger, R. F.

Roofe, P. G. Blood constituents of *Amblystoma tigrinum*. Anat. Rec. **140** : 337–340.

Roofe, P. G., see Latimer, H. B.

Rose, F. C., see Rose, S. M.

Rose, L. Clef dichotomique pour la détermination des Batraciens adultes de la région verviétoise. Rev. verviét. Hist. nat. **18** (11–12) : 96–98.

Rose, S. M. Failure of survival of slowly growing members of a population. Science **129** 1959 : 1026.

Rose, S. M. & F. C. Growth-controlling exudats of tadpoles. Symp. Soc. exp. Biol. No. 15 : 207–218 5 figs.

Rosenberg, A., see Russu, I. G.

(1) Rossi, A. Sul comportamento della coda di un anfibio urodelo trapiantata su Anuri dotati di differente velocità sviluppo. R.C. Accad. Lincei (8) **23** 1958 : 307–311 1 pl.

(2) Rossi, A. Esperienze di asportazione dell'ependima presuntivo in embrioni di Anfibi anuri. R.C. Accad. Lincei (8) **29** : 438–443 1 pl.

(3) Rossi, A. Nuove esperienze sull'asportazione dello strato dell'ependima presuntivo in embrioni di Anfibi anuri. R.C. Accad. Lincei (8) **30** : 565–570 2 pls.

(4) Rossi, A. Nuove esperienze sulle regolazioni nervose nelle parabiosi fra embrioni di Anfibi anuri. R.C. Accad. Lincei (8) **30** : 937–942 1 pl.

(5) Rossi, A. Ulteriori ricerche sulle regolazioni nervose nelle parabiosi fra embrioni di Anfibi anuri. R.C. Accad. Lincei (8) **31** : 165–171 1 pl.

Rostand, J. Survie et pourvoir fécondant des spermatozoïdes dans le testicule d'Amphibien conservé *in vitro* à basse température. C.R. Acad. Sci. Paris **252** : 3495–3496.

Roth, C. E. The spring peeper—an annual mystery. Audubon Mag. **63** : 148–150, 180, 2 figs.

[Rothman, N.] Die Amphibien und Reptilien Europas by Robert Mertens and Heinz Wermuth (Review). Bull. Philad. Herp. Soc. **9** (5) : 22–23.

Rowson, K. E. K. The action of tetanus toxin in frogs. J. gen. Microbiol. **25** : 315–329 1 pl.

Roy, B. C. General report of the Geological Survey of India for the year 1955. Palaeontological division. Palaeontology section. Rec. geol. Surv. India **89** : 252–256.

Roy, R., see Lamotte, M.

Ruben, L. N. Further studies on implant-induced supernumerary limbs in urodeles. Anat. Rec. **138** 1960 : 380. [Abst.]

Ruben, L. N. & Stevens, J. Some aspects of homograft-induced accessory limbs in urodeles. I. Systematic dosage effects. II. Local dosage effects. Amer. Zool. **1** : 384. [Abst.]

Rüdeberg, S. I. Morphogenetic studies on the cerebellar nuclei and their homologization in different vertebrates including man. Lund (Tornblad Institute of Comparative Embryology) : pp. 148 text-illust.

Rushton, W. A. H. Excitation pools in the frog's retina. J. Physiol. **149** 1959 : 327–345 6 figs.

Rushton, W. A. H., see Donner, K. O.

Russell, F. E. Boys, F. & Smith, H. M. " Poisonous amphibians and reptiles, recognition and bite treatment ". (C. C. Thomas, Springfield) Illinois : 149 pp. 1959 (Review). Amer. midl. Nat. **63** 1960 : 251–252.

Russu, I. G., Holan, T., Rosenberg, A. & Diacu, L. Der Einfluss des Radioaktiven phosphors (P^{32}) auf wachstum und differenzierung der Kauquappen von *Rana temporaria*. Acta anat. **46** : 223–229 2 figs. [English summary.]

Ryke, P. A. J. & Eeden, J. A. van. Neoteny, its interpretation, causes and phylogenetic significance. Tydskr. Natuurw. **1** (1) : 3–24. [In Dutch.]

Sabrosky, C. W., see Stoll, N. R.

Saez-N. Brum, F. A. Investigaciones citogenéticas de anfibios anuros de Sudamérica. Actas Trab. I Congr. sudamer. Zool. 1959 **5** 1960 [1961] : 303–305.

Šafránek, V. Some remarks on breeding of the Chinese giant salamander. Przegl. zool. **5** : 390–394 2 figs. [English summary.]

Saint-Girons, M.-C. Le dimorphisme sexuel sanguin chez *Salamandra salamandra quadri-virgata*. C.R. Soc. Biol. Paris **155** : 1479–1481.

Saito, T. On the laterality of induced limbs obtained by means of the xenoplastic transplantation of an anuran limb bud in *Triturus* larvae. Zool. Mag., Tokyo **70** : 134–141 4 figs. [In Japanese, English summary.]

Salpeter, M. M., see Singer, M.

Sambuichi, H. The roles of the nucleus and the cytoplasm in development. III. Diploid nucleo-cytoplasmic hybrids, derived from *Rana nigromaculata brevipoda* cytoplasm and *Rana nigromaculata nigromaculata* nuclei. J. Sci. Hiroshima Univ. (Zool.) Ser. B, Div. 1 **20** : 1–15 6 figs.

Samuelli, C., see Ranzi, S.

Sanchez, V., see Castillo, J. del.

Sanden-Guja, W. v. Ortstreue eines grünen Wasserfrosches (*Rana esculenta*). Z. Tierpsychol. **18** : 261–264 1 fig.

Sanders, O. Indications for the hybrid origin of *Bufo terrestris* Bonnaterre. Herpetologica **17** : 145–156 4 figs.

Sandow, A., see Eberstein, A.

Savage, J. M. & Kluge, A. G. Rediscovery of the strange Costa Rica toad, *Crepidius epioticus* Cope. Rev. Biol. trop., Costa Rica **9** : 39–51.

Savage, J. M. & Schuierer, F. W. The eggs of toads of the *Bufo boreas* group, with descriptions of the eggs of *Bufo exsul* and *Bufo nelsoni*. Bull. S. Calif. Acad. Sci. **60** : 93–99 1 fig.

Savage, R. M. The ecology and life history of the common frog (*Rana temporaria temporaria*). London (Sir Isaac Pitman & Sons, Ltd.) : vii+221 text-illust.

Savage, T., see Highton, R.

Sawada, S. On local variation of the mating behavior in the Japanese newt, *Triturus pyrrhogaster* Boie. Zool. Mag., Tokyo **70** : 342–347 1 fig. [In Japanese, English summary.]

Saxén, L. Transfilter neural induction of amphibian ectoderm. Developmental Biol. **3** : 140–152 7 figs.

Saxén, L. & Toivonen, S. The two-gradient hypothesis in primary induction. The combined effect of two types of inductors mixed in different ratios. J. Embryol. exp. Morph. **9** : 514–533 1 pl. 7 figs.

Saxén, L., Toivonen, S. & Vainio, T. The embryonic inductive action of cells cultivated *in vitro*. Acta Path. microbiol. Scand. **51** (suppl. 144) : 163–164 fig.

Saxén, L., see Toivonen, S.

Saxhina, M. V., see Vyazov, O. E.

Scheving, L. E. & Chiakulas, J. J. The effect of hypophysectomy on the daily rhythmic character of the mitotic rate in larval corneal epithelium. Anat. Rec. **139** : 271–272. [Abst.]

Scheving, L. E., see Chiakulas, J. J.

Schmalhausen, I. I. Concerning monophyletism and polyphyletism in relation to the origin of land vertebrates. Byull. Mosk. Obshch. Isp. Prirod. (Biol. Sect.) **64** (4) 1959 : 15–33.

Schmid, F. C. *Rana catesbeiana*. AIBS Bull. **11** (3) : cover photo. and p. 3.

Schmid, R., see Lester, R.

Schmidt, A. J. Architectural regularity of the subepidermal reticulum of the adult newt, *Triturus viridescens*. Amer. Zool. **1** : 386. [Abst.]

Schmidt, F. C. Histochemischer Carboanhydrasenachweis in der Leber. Naturwissenschaften **48** : 55 2 figs.

Schmidt, P. Das Krötensymbol in Kunst, Magie und Volkstunde. Kosmos, Stüttgart **57** (11) : 503–506.

Schmidt-Nielsen, B., see O'Dell, R. M.

Schmidt-Nielsen, K., see Gordon, M. S.

Schoffeniels, E., see Tercafs, R. R.

Scholl, A., see Hahn, H. P. von.

Schöpf, C. Die Konstitution der Salamander-Alkaloide. Experientia **17 :** 285–295 7 figs.

Schuierer, F. W., see Savage, J. M.

Schuster, R., see Kepka, O.

Scott, N. J., see Glade, R. W.

Sedar, A. W. Electron microscopy of the oxyntic cell in the gastric glands of the bullfrog, *Rana catesbiana*. II. The acid-secreting gastric mucosa. J. biophys. biochem. Cytol. **10 :** 47–57 7 figs.

(1) Sentein, P. Les formations chromatoïds riches en polysaccharides dans l'œuf de Batracien en segmentation. C.R. Soc. Biol. Paris **154** 1960 [1961] : 1483–1485.

(2) Sentein, P. Le déterminisme de la formation du sillon de cytodiérèse à la fin de la mitose dans la segmentation de l'œuf d'Urodèle. C.R. Acad. Sci. Paris **252 :** 3130–3132.

(3) Sentein, P. Le mécanisme normal de la mitose pendant la segmentation de l'œuf d'Urodèle. C.R. Acad. Sci. Paris **253 :** 547–549 9 figs.

(4) Sentein, P. La dynamique de l'appareil achromatique et ses relations avec la dynamique de la segmentation dans l'œuf d'Urodèle. C.R. Acad. Sci. Paris **253 :** 709–711.

Serra, J. A. & Vicente, M. M. J. Spermiogenesis of *Rana*, as an instance of cell differentiation. Rev. portug. Zool. **3 :** 115–144 2 pls. 3 figs.

Seward, W. D., see Campbell, A. D.

Shanes, A. M. Calcium influx in frog rectus abdominus muscle at rest and during potassium contracture. J. cell. comp. Physiol. **57 :** 193–202 3 figs.

Sharma, H. L. The circulatory mechanism and anatomy of the heart of the frog, *Rana pipiens*. J. Morph. **109 :** 323–349 48 figs.

Shell, L. C. Comparison of mitotic figure distribution in the central nervous system of normal and colchicine-treated *Rana pipiens* embryos. Amer. Zool. **1 :** 388. [Abst.]

Shibuya, T., see Takagi, S. F.

Shimozawa, A. Embryological studies on the corium of the larva of *Rana catesbiana*. Zool. Mag., Tokyo **70 :** 348–352 3 pls. [In Japanese, English summary.]

Shirai, T., Nonaka, T. & Kanazawa, K. Studies on metamorphosis in Amphibia (2). Okajimas Folia Anat. Jap. **37 :** 271–289 6 pls.

Shishkin, M. A. New data on *Tupilakosaurus*. Dokl. Akad. Nauk SSSR (Earth Sciences) **136 :** 938–941 figs. [In Russian.]

Shivers, A. Studies of the effect of homologous and heterologous anti-jelly sera on fertilization of eggs of *Rana pipiens*. Amer. Zool. **1 :** 388. [Abst.]

Shotton, F. W., see Coope, G. R.

Signoret, J., see Briggs, R.

Sijbers, F. Het opkweken van Vuursalamanderlarven. Lacerta **19 :** 44.

Simionescu, V., see Vancea, S.

Simpson, G. G. A classification of living animals by Lord Rothschild. London (Longmans, Green) ; New York (Wiley) : vii+106 (Review). Science **134 :** 1745.

(1) Sims, R. T. The blood-vessels of the developing spinal cord of *Xenopus laevis*. J. Embryol. exp. Morph. **9 :** 32–41 4 figs. 1 pl.

(2) Sims, R. T. The turnover of melanin in *Xenopus laevis* treated with phenylthiourea. Quart. J. micr. Sci. **102 :** 227–237 4 figs.

Singer, M. & Salpeter, M. M. The bodies of Eberth and associated structures in the skin of the frog tadpole. J. exp. Zool. **147 :** 1–19 4 pls.

Six, N., see Brachet, J.

Sjodin, R. A., see Harris, E. J.

(1) Skelton-Bourgeois, M. Reptiles et Batraciens d'Afrique orientale. Rev. Zool. Bot. afr. **63 :** 309–338.

(2) Skelton-Bourgeois, M. Reptiles et batraciens du Stanley Pool. Ann. Mus. Afr. centr. 8° (Zool.) No. 103 : 169–183 4 figs.

Skowron, S. & Walknowska, J. Developmental capacity changes of blastemal cells. Folia Biol., Cracov **8** 1960 : 33–40.

Sleppy, D. Comparative blood study of a colony of frogs. J. Colo.—Wyom. Acad. Sci. **5** (2) : 59.

Smiley, D., see Benton, A. H.

Smith, C. C. Notes on the salamanders of Arkansas. 2. The status of *Desmognathus* in Arkansas. Proc. Ark. Acad. Sci. **14** 1960 : 14–19.

Smith, C. L. Stability of amphibian monoamine oxidase and the inhibitory action of semicarbazide. Comp. Biochem. Physiol. **1** 1960 : 305–318 4 figs.

Smith, D. E. & Thomson, J. F. Physiological and biochemical studies on various species exposed to massive X-irradiation. Radiation Res. **11** 1959 : 198–205.

(1) Smith, H. M. & Tihen, J. A. *Siredon* Wagler, 1830 (Amphibia, Caudata) : proposed suppression under the Plenary Powers. Bull. zool. Nom. **18 :** 172–176.

(2) Smith, H. M. & Tihen, J. A. *tigrina* (*Salamandra*) Green, 1825 : proposed validation under the Plenary Powers (Amphibia, Caudata). Bull. zool. Nom. **18 :** 214–216.

Smith, H. M., see Chrapliwy, P. S.

Smith, P. J. H., see Newman, R. H.

Smith, P. W. The amphibians and reptiles of Illinois. Bull. Ill. nat. Hist. Surv. **28 :** 1–298 251 figs.

Soot-Ryen, T., see Støp-Bowitz, C.

Sorokina, N. N., see Vyazov, O. E.

Sparrow, A. H., see Jakowska, S.

Spiegel, M. Tryptophan pyrrolase activity in the liver of adult *Rana pipiens*. Biol. Bull., Woods Hole **121** : 547–553.

Spiegel, M. & Frankel, D. L. Role of enzyme induction in embryonic development. Science **133** : 275.

Squadroni, J. & Wolsky, A. Direct demonstration of sexual differences in skin homografts of the newt *Triturus viridescens*. Amer. Zool. **1** : 391. [Abst.]

Srebro, Z. The influence of brain injuries on the development of *Xenopus laevis*. Folia biol., Krakow **9** : 119–129 14 figs.

Stadie, C. Einige vergleichend-anatomische Bemerkungen zur Kritik von Taxonomie und Systematik der Anuren. Zool. Anz. **166** : 245–257 6 figs.

Stahl, A., Chevalier, J. M. & Donnet, V. Étude histologique de la thyroïde et de l'hypophyse des têtards de *Bufo vulgaris* après traitement par la cortisone. C.R. Soc. Biol. Paris **154** : 2355–2358.

Stanbury, P. J. Comparison of the mitochondria of the small intestine of vertebrates. Nature, Lond. **192** : 67 2 figs.

Štefanová, Z. & Romanovský, A. Induction of ovulation in Czechoslovak species of *Rana* out of the breeding season by means of pituitary implantations and by injections of mammalian hormones. Folia biol. Praha **7** (3) : 220–222.

Stensiö, E. A. The sensory lines and dermal bones of the cheek in fishes and amphibians. K. Svensk. Vet. Akad. Handl. (3) **24** (3) 1947 : 1–195 38 figs.

Stephenson, E. M. New Zealand native frogs. Tuatara **8** : 99–106 2 figs.

Steven, J., see Ruben, L. N.

Stewart, M. M. An ecological survey of amphibians, reptiles, and mammals of Allegany Indian Reservation and vicinity. Bull. N.Y. St. Mus. No. 383 : 63–98 map.

Steyn, W. Some epithalmic organs, the subcommisural organ, and their possible relation to vertebrate emergence on dry land. S. Afr. J. Sci. **57** : 283–287 1 fig.

Stinson, B. D. Differential effects of normal autografts of whole versus lateral half forearm regenerates on X-irradiated upper arms of adult newts. Amer. Zool. **1** : 391–392. [Abst.]

(1) Stolk, A. Histochemical localization of oxidase activity in the mitochondria of the heart in some lower vertebrates. Nature, Lond. **185** : 866–867.

(2) Stolk, A. Two types of ribonucleoprotein in the nucleolus of intestinal carcinoma of the newt following injection of herring-sperm-deoxyribonucleic acid. Nature, Lond. **192** : 1215–1216.

(3) Stolk, A. Induction of hepatic cirrhosis in the axolotl by 3-monohydroxycholanic acid treatment. Naturwissenschaften **48** : 671–672.

(4) Stolk, A. Two types of ribonucleic protein in the nucleolus of intestinal carcinoma in the newt *Triturus alpestris* following injection of herring sperm deoxyribonucleic acid. Experientia **17** : 254–255.

(5) Stolk, A. Diurnal changes in the topographical distribution of glycogen in the brain of the toad *Bufo calamita*. Proc. Akad. Wet. Amst. **64C** : 42–52 10 figs.

(6) Stolk, A. Changes in the topographical distribution of glycogen in the brain of the toad *Bufo calamita* in dependence on the environmental temperature. Proc. Akad. Wet. Amst. **64C** : 68–78 10 figs.

(7) Stolk, A. Muscular dystrophy in the toad *Bufo bufo japonicus* as an aberration of the connective tissue. Proc. Akad. Wet. Amst. **64C** : 327–342 24 figs.

(8) Stolk, A. Tumours of amphibians. VIII. Transplantation experiments with the cutaneous fibroma in the toad *Bufo bufo japonicus*. Proc. Akad. Wet. Amst. **64C** : 343–361 14 figs.

(9) Stolk, A. Tumours of amphibians. IX. The inhibitory effect of colchicine upon the cutaneous fibroma in the toad *Bufo bufo japonicus*. Proc. Akad. Wet. Amst. **64C** : 362–374 10 figs.

(10) Stolk, A. Het schiumnest van *Rhacophorus leucomystax*. Lacerta **19** : 38–39.

(11) Stolk, A. Slakkenvoeding en vruchtbaarheid. Lacerta **20** : 13–16 3 figs.

Stoll, N. R., Dollfus, R. P., Forest, J., Riley, N. D., Sabrosky, C. W., Wright, C. W. & Melville, R. V. [Editors.] International code of zoological nomenclature adopted by the XV International Congress of Zoology. London (International Trust for Zoological Nomenclature) : xviii+176.

Stone, L. S. Polarization of the retina and development of vision. J. exp. Zool. **145** 1960 : 85–96.

Støp-Bowitz, C., Kolstad, K. & Soot-Ryen, T. Norske dyrenavn med filhørende latinske navn. A. Virveldyr. Fauna, Oslo [**14**] 1 Bilag 1960 [1961] : 1–57.

Strachan, I., see Coope, G. R.

Straub, R. N. On the mechanism of post-tetanic hyperpolarization in myelinated nerve fibres from the frog. J. Physiol. **159** (Proc.) : 19P–20P.

Streett, J. C., Jr. Gross morphology and rate characteristics of liver restoration in *Rana pipiens*. Tex. J. Sci. **13** : 61–71 1 fig.

Stroeva, O. G., see Lopashov, G. V.

Stuart, L. C. Some observations on the natural history of tadpoles of *Rhinophrynus dorsalis* Dumeril & Bibron. Herpetologica **17** : 73–79.

Stuart, L. C., see Baylor, E. R.

Stugren, B. & Kobl, I. Beobachtungen über die Biologie des Moorfrosches (*Rana arvalis* Nilss.) in Siebenbürgen. Vert. Hungarica **3** : 65–70.

(1) Stugren, B. & Popovici, N. Notes faunistiques herpétologiques de la République Populaire Roumaine II. Stud. Cercet. Biol. Cluj **12** : 229–234. [French summary.]

(2) Stugren, B. & Popovici, N. Analysis of the variability of external characters in *Bombina* (Discoglossidae) of Rumania. Zool. Zh. **40** : 568–576 4 figs.

Stugren, B. & Rădulescu, M. Mathematische Methoden in der regionalen Tiergeographie. Stud. Cercet. Biol. Cluj **12** (1) : 7–24. [German summary.]

Stürckow, B. Zur Haltung von Fröschen. Zool. Anz. **167** : 389–390.

(1) Subtelny, S. & Bradt, C. Cytological observations on the early developmental stages of activated *Rana pipiens* eggs receiving a transplanted blastula nucleus. Amer. Zool. **1** : 470–471. [Abst.]

(2) Subtelny, S. & Bradt, C. Transplantations of blastula nuclei into activated eggs from the body cavity and from the uterus of *Rana pipiens*. II. Development of the recipient body cavity eggs. Developmental Biol. **3** : 96–114 22 figs.

Sudarev, O. N., see Pashkova, I. M.

Sung, H. S. Relationship between mitochondria and yolk platelets in developing cells of amphibian embryos. Exp. Cell Res. **25** : 702–704 1 fig.

Szabó, I. Ein neuer Saugwurm der ungarischen Fauna (*Brachycoelium salamandrae* Fről.) aus dem Dünndarm der *Salamandra salamandra* L. Ann. Hist.-nat. Mus. Hung. **53** : 299–304 1 fig. 1 pl.

Szarski, H. The origin of Amphibia. Warszawa (Pánstwowe Wydawnictwo Naukowe) : pp. 158 text-figs. [In Polish.]

Szydłowska, H. The fibroarchitectonics of the cerebral glia in *Rana esculenta*. Folia morph., Warsz. N.S. **12** : 35–46 6 pls.

Tahara, Y. & Nakamura, O. Topography of the presumptive rudiments in the endoderm of the anuran neurula. J. Embryol. exp. Morph. **9** : 138–158 22 figs. 1 pl.

Takagi, S. F. & Shibuya, T. The " on " and " off " responses observed in the lower olfactory pathway. Jap. J. Physiol. **10** 1960 : 99–105 4 figs.

Takai, F., see Hanzawa, S.

(1) Takata, C. The differentiation *in vitro* of the isolated endoderm under the influence of the mesoderm in *Triturus pyrrhogaster*. Embryologia **5** 1960 : 38–70 16 figs.

(2) Takata, C. The differentiation *in vitro* of the isolated endoderm in the presence of the neural fold in *Triturus pyrrhogaster*. Enbryologia **5** 1960 : 194–205 4 figs.

Takata, C. & Yamada, T. Endodermal tissues developed from the isolated newt ectoderm under the influence of guinea pig bone marrow. Embryologia **5** 1960 : 8–20 6 figs.

Takata, K., see Yamada, T.

Taleisnik, S. & Capmourteres, E. Influence des hormones de la neurohypophyse dans l'élimination d'eau par le rein du Crapaud. C.R. Soc. Biol. Paris **154** : 2376–2377.

Talesara, C. L. On two cases of anomaly of the external jugular veins in the Indian frog *Rana tigrina* (Daud.). Brit. J. Herpetol. **2** : 214–215 figs.

Talmage, R. V. & Yoshida, R. Influence of the parathyroids on frog bone. Amer. Zool. **1** : 471. [Abst.]

Tamasige, M., see Washio, H.

Tamsitt, J. R. Notes on the herpetofauna of the Delta Marsh of Lake Manitoba, Canada. Can. Fld Nat. **75** : 149–151.

Tanner, W. W. & Brame, A. H., Jr. Description of a new species of salamander from Panama. Gt. Basin Nat. **21** : 23–26 1 fig.

Taub, F. B. The distribution of the red-backed salamander, *Plethodon c. cinereus*, within the soil. Ecology **42** : 681–698 12 figs.

Taxi, J. Étude de l'ultrastructure des zones synaptiques dans les ganglions sympathiques de la Grenouille. C.R. Acad. Sci. Paris **252** : 174–176 4 pls.

Taylor, E. H. Notes on Indian Caecilians. J. Bombay nat. Hist. Soc. **58** : 355–365 2 figs.

Teague, R. S. & Patton, J. R. An *in vivo* assay of melanophore hormone. Amer. Zool. **1** : 393. [Abst.]

Techter, D. A list and bibliography of the fossil amphibians, reptiles and birds of Illinois. Nat. Hist. Misc. No. 176 : 1–6.

TenBroek, B. J. Some observations on the effects of certain environmental factors on neoteny and metamorphosis of the tiger salamander, *Ambystoma tigrinum*, from three Colorado populations. J. Colo.-Wyom. Acad. Sci. **4** (11) 1959 : 52. [Abst.]

(1) Tencer, R. The effect of 5-fluorodeoxyuridine on amphibian embryos. Exp. Cell Res. **23** : 418–419.

(2) Tencer, R. Incorporation of tritium-labelled thymidine in *Bufo* ♀ × *Rana temporaria* ♂ hybrid embryos. Nature, Lond. **190** : 100–101.

Teplits, N. A., see Polezhaev, L. V.

Tercafs, R. R. & Schoffeniels, E. Action of d-tubocurarine chloride on net flux of water across isolated frog skin. Science **133** : 1706.

(1) Terentyev, P. V. Taxonomy of genus *Bufo* from biometrical viewpoint. Vestn. leningr. Univ. **1961** No. 15 : 85–91 3 figs. [English summary.]

(2) [Terent'ev, P. V. Herpetology : a study of amphibians and reptiles.] Moskva (Gosudarst' vennoe Izdatel'stvo " Vysshaya Shkda ") pp. 336, text-illust. [In Russian.]

Tertyshnik, N. T., see Il'inskii, O. B.

Test, F. H., see Heatwole, H.

Tester, J. R., see Breckenridge, W. J.

Thomson, J. F., see Smith, D. E.

Threadgold, L. T., see Leeson, C. R.

Thurmond, W. A melanophore-stimulating substance in the hypothalamus of the tadpole and adult tree frog, *Hyla regilla*. Amer. Zool. **1** : 472. [Abst.]

Thurow, G. R. A salamander color variant associated with glacial boundaries. Evolution **15** : 281–287 1 fig.

Tihen, J. A., see Smith, H. M.

Timon-David, J. Rôle du têtard de *Rana esculenta* L. comme second hôte intermédiaire dans le cycle d'*Ascocotyle branchialis* nov. sp. (Trematoda, Digenea, Hetreophyidae). C.R. Acad. Sci. Paris **252** : 3122–3124.

Tipton, S. R., see Pryor, M. Z.

Toivonen, S. An experimentally produced change in the sequence of neuralizing and mesodermalizing inductive actions. Experientia **17** : 87–88 fig.

Toivonen, S., Saxén, L. & Vainio, T. Quantitative evidence for the two-gradient hypothesis in the primary induction. Experientia **17** : 86–87 fig.

Toivonen, S., see Saxén, L.

Toner, G. C., see Logier, E. B. S.

Tőrő, I., see Csaba, G.

Toutain, J. Action de l'obscurité et du froid sur la glande thyroïde de la grenouille verte (*Rana esculenta* Linné). Ann. Endocr., Paris **22** (6) : 885–897 17 figs. [English summary.]

Tricoche, R., Laplaud, J., Monnereau, H. & Gargouil, Y. M. Modification par la métamorphose de l'activité électrique cellulaire du ventricule d'Amblystome. C.R. Soc. Biol. Paris **155** : 104–106 1 fig.

Tricoche, R., see Laplaud, J.

Trivelloni, J. C., Donoso, A. O. & Bur, G. E. Iodoradiothyroïdectomie chez le Crapaud. C.R. Soc. Biol. Paris **154** : 2372–2373.

Tucci de Gorini, L. C., see Prieto Díaz, H.

(1) **Tuft, P.** The effect of a morphogenetic inhibitor (β mercapto-ethanol) on the uptake and distribution of water in the embryo of *Xenopus laevis*. Proc. R. phys. Soc. Edinb. **28** (3) : 123–130 2 figs.

(2) **Tuft, P.** Role of water-regulating mechanisms in amphibian morphogenesis : a quantitative hypothesis. Nature, Lond. **192** : 1049–1051 4 figs.

Turner, B. L., see Hunsaker, D.

Turner, F. B. The use of anuran skins and skeletons. Turtox News **39** : 38–39.

Tweedell, K. S. Induced fluorescence of a frog renal adenocarcinoma grown in tissue culture. Amer. Zool. **1** : 473. [Abst.]

Twiselton, G. Amphibians and reptiles. J. Northants nat. Hist. Soc. **34** (244) : 60–65.

(1) **Twitty, V. C.** Experiments on homing behavior and speciation in *Taricha*. *In* Blair, W. F., Vertebrate speciation. A University of Texas Symposium. Austin (University of Texas Press) : 415–459 11 figs.

(2) **Twitty, V. C.** Second-generation hybrids of the species of *Taricha*. Proc. nat. Acad. Sci. Wash. **47** : 1461–1486 12 figs.

(1) **Tyler, M. J.** Food of *Halcyon sancta* in New Guinea. Ibis **103a** : 625.

(2) **Tyler, M. J.** A preliminary note on herpetological data obtained from natives in the Central Highlands of New Guinea. Brit. J. Herpetol. **2** : 219–220.

Ulfstrand, S. On the vertebrate fauna of the Azores. Amphibia : 76–77. Bol. Mus. Funchal **14** (42–50) : 75–86.

Unayama, H. On the development of the Mm. petrohyoidei in the Anura during metamorphosis. Yokohama med. Bull. **12** (1 Suppl.) : 1–22 21 figs. [Not seen.]

Underhill, J. C. Variation in Woodhouse's toad, *Bufo woodhousei* Girard in South Dakota. Copeia **1961** : 333–336.

Uranga, J. Action de l'ocytocine et de la température sur le filtrat glomérulaire du Crapaud. C.R. Soc. Biol. Paris **155** : 173–174.

Ushakov, B. P. & Krolenko, S. A. Comparative cytophysiological analysis of the reaction of muscle fibers under the influence of urea. Dokl. Akad. Nauk SSSR **133** 1960 : 726–729. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **133** : 618–620 1 fig.]

Ushakov, V. B. A note on the protein substrate of the "slow" and "fast" skeletal muscles of the frog. Vestn. leningr. Univ. **1961** No. 9 : 123–134 3 figs. [English summary.]

Uzzell, T. M. Calcified hyoid and mesopodial elements of plethodontid salamanders. Copeia **1961** : 78–86 3 figs.

Vainio, T., see Saxén, L.

Vainio, T., see Toivonen, S.

Valentine, B. D. Variation and distribution of *Desmognathus ocoee* Nicholls (Amphibia : Plethodontidae). Copeia **1961** : 315–322 4 figs.

Valett, B. B. & Jameson, D. L. The embryology of *Eleutherodactylus augusti latrans*. Copeia **1961** : 103–109 2 figs.

Val'tsev, V. B. Stimulating effect of removal of continuous light stimulus on rhythmic activity of frog eye. Dokl. Akad. Nauk SSSR **135** 1960 : 493–496. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **135** : 965–967 3 figs.]

Valverde, J. A. Vertebrados de las Marismas del Guadalquivir. (Introducción a su estudio ecológico.) Arch. Inst. aclim. Almeira **9** : 1–168 16 pls. 7 figs.

Vancea, S., Mindou, C. & Simionescu, V. Contributions à la connaissance de la nourriture de *Rana ridibunda* des environs de Iassy. Stud. Cercet. St. Biol. Agr. Acad. Romîne Fil Iaşi **12** : 111–120 2 figs. tables. [French summary.]

Van Dijk, D. E. Tadpoles as a field of study. J. S. Afr. biol. Soc. **2** : 43–45.

Vankin, C. L. & Dalton, H. C. Embryonic grafting and drug experiments on melanophores involved in tail darkening of hypophysectomized urodele larvae. Amer. Zool. **1** : 473. [Abst.]

Vannini, E. & Ghirardelli, E. Sui fenomeni regolativi dell'abbozzo genitale in *Bufo bufo*, dopo asportazione del territorio presuntivo dell'organo di Bidder. R.C. Accad. Lincei (8) **30** : 107–111 3 figs.

van Oordt, P. G. W. J. & Basu, S. L. The effect of testosterone on the spermatogenesis of the common frog *Rana temporaria*. Acta Endocrinol. **33** 1960 : 103–110 1 fig.

Van Weel, P. B. Contribution to the physiology of smooth muscle. I. The effect of hypo-, iso-, and hypertonic ringer- and monocationic solutions on the tonus of smooth muscle of the stomach of the toad, *Bufo marinus*. Zool. Jb. (Allg. Zool.) **69** : 251–272 18 figs.

Vásquez, C., see Candelas, G. C.

Vasu, B. S., see Cherian, A. G.

Vaz-Ferreira, R. Acción de la 2, 3, 5-trimetil-1-4-benzoquinona sobre la pigmentación de larvas de Anuros. Arch. Soc. biol. Montevideo **25** 1960 : 30–37 5 figs. [English summary.]

Vellard, J. Distribución de los batracios en las altas regiones Andinas del Perú y Bolivia. Actas Trab. I Congr. sudamer. Zool. 1959 **1** 1960 [1961] : 279–292.

Veninga, T. S. The frog's eye electroretinogram as an immediate X-ray effect. Proc. Akad. Wet. Amst. **64C** : 208–211 8 figs.

Vergnaud, C., see Hecht, M.

Verzár, F., see Brocas, J.

Vicente, M. M. S., see Serra, J. A.

Villwock, W. Notizen über *Neurergus crocatus* (Cope) 1862. Aquar. Terrar Z. **14** : 246–248.

Visser, J. Some Amphibia of the Cape Peninsula. I. The arum frog *Hyperolius h. horstokii* (Tschudi). Afr. Wild Life **15** : 243–244 2 figs.

Vlădescu, C. Recherches sur la régulation du métabolisme glucidique chez les amphibiens. Glycémie normale et hyperglycémie provoquée chez *Rana ridibunda* (1). Comun. Acad. Bucureşti **11** : 957–963. [French summary.]

(1) Voitkevich, A. A. The humoral effect of neurosecretion of preoptic nuclei on the metamorphosis of the larvae of Amphibia. Dokl. Akad. Nauk SSSR **138** : 235–238. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **138** : 399–402.]

(2) Voitkevich, A. A. The development and structure of the median eminence of the neurohypophysis in amphibians. Dokl. Akad. Nauk SSSR **138** : 481–484. [In Russian.] [*See also* Dokl. Akad. Nauk SSSR (Transl.) (Biol. Sci.) **138** : 392–395 10 figs.]

(1) Volpe, E. P. Genetic analysis of variant pigmentary patterns in the leopard frog, *Rana pipiens*. ASB Bull. **7** 1960 : 40. [Abst.]

(2) Volpe, E. P. Polymorphism in anuran populations. *In* Blair, W. F., Vertebrate speciation. A University of Texas Symposium. Austin (University of Texas Press) : 221–234 4 figs.

(3) Volpe, E. P. Variable expressivity of a mutant gene in leopard frog. Science **134** : 102–104 2 figs.

Volpe, E. P. & Dasgupta, S. Development, sex and pigmentary patterns of gynogenetic diploid leopard frogs (*Rana pipiens*). Amer. Zool. **1** : 395. [Abst.]

Volpe, E. P., Wilkens, M. A. & Dobie, J. L. Embryonic and larval development of *Hyla avivoca*. Copeia **1961** : 340–349 7 figs.

Volpe, E. P., see Dessauer, H. C.

Voss, W. J. Rate of larval development and metamorphosis of the spadefoot toad, *Scaphiopus bombifrons*. Sthwest. Nat. **6** : 168–174 2 figs.

Vyazov, O. E. & Sazhina, M. V. Immunobiological study of the process of lens regeneration in *Triton taeniatus*. Zh. Obshch. Biol. **22** : 305–310. [English summary.]

Vyazov, O. E. & Sorokina, N. N. Actively acquired tolerance to skin heterografts in tailless amphibians (*Rana arvalis*). Folia biol., Praha **7** : 93–97 6 figs.

(1) Wager, V. [A.] South African frogs [3 photos.]. News Bull. zool. Soc. S. Afr. **2** (1) 1960 : [plate inter. pp. 15, 16].

(2) Wager, V. A. The running frog. Afr. Wild Life **15** : 35–38 4 figs.

(3) Wager, V. A. The plain *Rana*. Afr. Wild Life **15** : 151–155 4 figs.

Wake, D. B. The distribution of the Sinaloa narrow-mouthed toad, *Gastrophryne mazatlanensis* (Taylor). Bull. S. Calif. Acad. Sci. **60** : 88–92 map.

Wake, D. B. & Kluge, A. G. The Machris Expedition to Tchad, Africa. Amphibians and reptiles. Contr. Sci. Los Angeles No. 40 : 1–12 1 fig.

Waleewa, Ch. G. Vergleichend-anatomische Untersuchungen über die Mikromorphologie des Nervenapparates der Niere. Mitteilung I. Zur Morphologie des Nervenapparates der Niere bei Amphibien. Anat. Anz. **108** 1960 : 20–25 5 figs.

Walker, A. D., see Panchen, A. L.

Walker, B. E., see O'Steen, W. K.

Walknowska, J., see Skowron, S.

Wallace, R. A. Enzymatic patterns in the developing frog embryo. Developmental Biol. **3** : 486–515 13 figs.

(1) Walton, A. C. Amphibia as hosts of nematode parasites I and II. Amer. Zool. **1** : 396–397. [Abst.]

(2) Walton, A. C. The Amphibia as hosts of cestodes and Acanthocephala. Amer. Zool. **1** : 475. [Abst.]

Washio, H., Kakiuchi, Y. & Tamasige, M. Polarized light microscopy on the single frog muscle fibre. J. Fac. Sci. Hokkaido Univ. (Zool.) **14** : 499–510 1 pl.

Waterman, A. J., see Grant, W. C., Jr.

Webb, R. G. & Packard, R. L. Notes on some amphibians and reptiles from eastern Texas. Sthwest. Nat. **6** : 105–107.

Weber, R. Similar pattern of fine structure in the basement lamella of the skin and the external sheath of the notochord in *Xenopus* larvae. Experientia **17** : 365–366 2 figs.

Weiss, A. B., Matthews, S. A. & Grant, W. C., Jr. Some effects of temperature and insulin on carbohydrate metabolism in the frog *Rana pipiens*. Amer. Zool. **1** : 397. [Abst.]

(1) Weissmann, G. Changes in connective tissue and intestine caused by vitamin A in Amphibia, and their acceleration by hydrocortisone. J. exp. Med. **114** : 581–592 6 pls. [Not seen.]

(2) Weissmann, G. Alterations in connective tissue and intestine produced by hypervitaminosis A in *Xenopus laevis*. Nature, Lond. **192** : 235–236 1 fig.

Werman, R. Electrical inexcitability of the synaptic membrane in the frog skeletal muscle fibre. Nature, Lond. **188** 1960 : 149–150.

Westfall, J. A., see Eakin, R. M.

Westhuizen, C. M. v. d. The development of the chondrocranium of *Heleophryne purcelli* Sclater with special reference to the palatoquadrate and the sound-conducting apparatus. Acta zool., Stockh. **42** : 1–72 44 figs.

Westmark, G. W., see Frieden, E.

Westoll, T. S. A crucial stage in vertebrate evolution : fish to land animals. Proc. roy. Instn. G.B. **38** : 600–618 6 figs.

Whitaker, J. O. Habitat and food of mouse-trapped young *Rana pipiens* and *Rana clamitans*. Herpetologica **17** : 173–179.

White, M. J. D. The role of chromosomal translocations in urodele evolution and speciation in the light of work on grasshoppers. Amer. Nat. **95** : 315–321 1 fig.

Whitehead, D. E., see Palmer, W. H.

Whiting, H. P. Pelvic girdle in amphibian locomotion. Symp. zool. Soc. Lond. No. 5 : 43–57 4 figs. 2 pls.

Whitley, G. P. The life and work of Gerard Krefft (1830–1881). Proc. R. zool. Soc. N.S.W. **1958–59** [1961] : 21–34.

Whittembury, G. Ion and water transport in the proximal tubules of the kidney of *Necturus maculosus*. J. Gen. Physiol. **43** no. 5 pt. 2 (May suppl.) 1960 : 43–56 8 figs.

Wijngaarden, A. van. Enkele gegevens over de Amphibieën-en Reptielenfauna van Goeree-Overflakkee. Wetenschappelijk Genootschap voor Goeree-Overflakkee. Jaarboek **1961** : 124–125.

Wilcox, E. V. Notes on Ohio batrachians. [Reprinted from] Otterbein Aegis **1** (9) 1891 : 133–135. Colombus (Ohio herpet. Soc.).

Wilde, C. E. Factors concerning the degree of cellular differentiation in organotypic and disaggregated tissue cultures. Colloq. int. Cent. nat. Rech. sci. No. 101 : 183–198 3 pls.

Wilkens, M. A., see Volpe, E. P.

(1) Williams, D. D. Liver grafting in the newt, *Triturus viridescens*. Anat. Rec. **139** : 286–287. [Abst.]

(2) Williams, D. D. Liver regeneration in the newt, *Triturus viridescens*. Physiol. Zool. **34** : 256–259 1 pl.

Williams, E. E. Gadow's arcualia and the development of tetrapod vertebrae. Quart. Rev. Biol. **34** 1959 : 1–32 22 figs.

Williams, J. E. The western lesser siren in Michigan. Copeia **1961** : 355.

Williams, K., see Chrapliwy, P. S.

Williams, K. L. & Gordon, R. E. Natural dispersal of the salamander *Aneides aeneus*. Copeia **1961** : 353.

Wilson, B., Hansard, S. L. & Cole, B. T. Total blood volume of the turtle and the frog. Proc. La. Acad. Sci. **23** : 45–52.

Winkelmann, E. Beschleunigung der Rückenmarks-Regeneration bei *Amblystoma mexicanum* durch Einwirkung von Succinodinitril. Z. mikr. anat. Forsch. **67** : 398–408 6 figs.

Wischnitzer, S. The amphibian oocyst nucleus. Nucleus **4** : 177–198 15 figs.

Wolf, K., Quimby, M. C., Pyle, E. A. & Dexter, R. P. Preparation of monolayer cell cultures from tissues of some lower vertebrates. Science **132** 1960 : 1890–1891.

Wolff, E. Migrations et contacts cellulaires dans la regeneration. Exp. Cell Res. Suppl. No. 8 : 246–259 10 figs.

Wolsky, A., see Squadroni, J.

Woodham, G., see DeLanney, L. E.

Wright, C. W., see Stoll, N. R.

Wright, P. A. Blood sugar studies in the bullfrog, *Rana catesbiana*. Endocrinology **64** 1959 : 551–558 2 figs.

Wright, P. A. & Flathers, A. R. Facilitation of pituitary-induced frog ovulation by progesterone in early fall. Proc. Soc. exp. Biol., N.Y. **106** : 346–347.

Wright, R. M. & Lerner, A. B. On the movement of pigment granules in frog melanocytes. Endocrinology **66** 1960 : 599–609 11 figs.

Wróblewski, R. The autogram method of detecting cathepsins (Benz) and its application to small objects. Folia biol., Krakow **9** : 143–150 5 figs.

Wróblewski, R. & Grzybek, A. The microautographic investigation of catheptic activity during the development, metamorphosis and regeneration process of the *Xenopus laevis* Daud. tail. Folia biol. Krakow **9** : 169–179 12 figs.

Wurster, D. H. & Miller, M. R. Studies on the blood glucose and pancreatic islets of the salamander, *Taricha torosa*. Comp. Biochem. Physiol. **1** 1960 : 101–109 8 figs.

Wyllie, G. A., see Livezey, R. L.

Yalden, D. W. & Morris, P. A. Edible frogs at Esher. Brit. J. Herpet. **3** : 17.

Yamada, T. & Takata, K. A technique for testing macromolecular samples in solution for morphogenetic effects on the isolated ectoderm of the amphibian gastrula. Developmental Biol. **3** : 411–423 6 figs.

Yamada, T., see Takata, C.

Yamaguchi, T. Electrophysiological studies on the mechanism of effects of anaesthetics on the isolated frog muscle fibre. J. Fac. Sci. Hokkaido Univ. (Zool.) **14** : 522–535 10 figs.

Yoh, L., see Kaplan, H. M.

Yoshida, M. The fine structure of the photoreceptors of the newt retina. Anat. Rec. **139** : 289. [Abst.]

Yoshida, R., see Talmage, R. V.

Yoshikura, M. The action of the pituitary in sex differentiation and sex reversal in amphibians. III. Induction of gonad masculinization by pituitary grafts in the heat-treated hypophysectomized frog larvae. Kumamoto J. Sci. **5B** (Biol.) : 185–201 9 pls.

Young, C.-C. A statistics of genera of fossil lower tetrapods of China. Vertebrata Palasiatica **1961** : 284–285. [In Chinese.]

Yuhas, P. J. Breeding the African water frog. Trop. Fish Hobbyist **9** (8) : 10–14 10 figs.

Zeller, Ch., see Chen, P. S.

Zimmerman, S. B. & Dalton, H. C. Physiological responses of amphibian melanophores. Physiol. Zool. **34** : 21–33 3 figs.

Zweifel, R. G. Larval development of the tree frogs *Hyla arenicolor* and *Hyla wrightorum*. Amer. Mus. Novit. No. 2056 : 1–19 9 figs.

Zweifel, R. G., see Adkins, W. M.

Zwilling, E. Limb morphogenesis. Advanc. Morphogenesis **1** : 301–330.

II.—SUBJECT INDEX

References to the "Titles" are by the name(s) of the Author(s) printed in clarendon type.

GENERAL LITERATURE AND HISTORY

Text-books.—Guide to the reptiles, amphibians and freshwater fishes of Florida, **Carr & Goin** ; Living amphibians of the world, with coloured illustrations, **Cochran** (2) ; Vivarium life (second edition), **Leutscher** ; Diseases of Amphibia, **Reichenbach-Klinke** ; Ecology and life history of *Rana t. temporaria*, **Savage, R. M.** ; International Code of Zoological Nomenclature, **Stoll, Dollfus, Forest et al.** ; The origin of Amphibia (in Polish), **Szarski** ; Reptiles and amphibians, a general study, **Terent'ev** (2).

General Works.—Illustrations of New Zealand frogs, **Barwick** ; Annotated list of German Amphibia with key and figs., **Freytag** (1) ; General notes on salamanders with photos., **Freytag** (4) ; Argentine zoological studies on Amphibia since 1536, **Gallardo** (6) ; Review of electron microscopy of spermatogenesis, **Gatenby** ; Regeneration of vertebrate appendages, **Goss** ; Frogs of eastern New South Wales, **Moore, J. A.** (2) ; The world of ancient animals, **Orlov** ; Career opportunities for the herpetologist, **Peters, J. A.** ; Explanation of amphibian terminology, **Rivero** ; Mono- or polyphyletic origin of land vertebrates ?, **Schmalhausen** ; Amphibians and reptiles of Illinois, **Smith, P. W.** ; Reprint of E. V. Wilcox 1891 "Notes on Ohio Batrachians", **Wilcox.**

Bibliography.—On the use of arthropods in preparing vertebrate skeletons, **Banta** (1) ; Fossil vertebrates 1949–1953, author catalogue, subject and systematic indices, **Camp & Allison** ; Concerning the herpetofauna of North Carolina, **DePoe, Funderburg & Quay** ; Literature on Austrian Amphibia, **Eiselt** ; Literature on electron microscopy of centriole and flagellum in spermatogenesis, **Gatenby** ; Relating to the fauna of the Solnhofener shales, **Kuhn** (2) ; Review of literature on anuran isolating mechanisms, **Mecham** (3) ; References to Australian frogs, **Moore, J. A.** (2) ; On fossil amphibians of Colombia, **Porta** ; List and bibliography of the fossil amphibians of Illinois, **Techter.**

Biography.—Of Ivan Ivanovich Schmalhausen, born 1884 (from Great Soviet Encyclopedia, vol. 48, pp. 119, 120), **Schmalhausen** ; Life and work of Gerard Krefft (1830–1881), **Whitley.**

Folk Lore.—The mythical toad-stone, **Gunstone** ; Toads in art and folklore, **Schmidt, P.**

Museums and Collections.—Solenhofer Museum, photos. of exhibits, **Anon.** (1) ; Type specimens of amphibians in the United States National Museum, **Cochran** (1) ; The Zoological Centre in Spanish Guinea, **Cuspinera** ; Pathologist's report for 1959, Zoological Gardens, Regent's Park, **Fiennes** ; Type specimens of Japanese fossils ; locality, horizon and repository, **Hanzawa, Asano & Takai** ; Notes on *Hyperolius* and *Afrixalus* types in Berlin Museum, **Laurent** (3) ; Check-list of Amphibia recorded in the Kruger National Park, **Pienaar** ; Salientia of Venezuela, **Rivero.**

Nomenclature.—*Bufo arunco* (Molina) (in Garnot & Lesson 1826) has priority over *B. spinulosus* Wiegmann (1834) ; the latter name is more widely used and should therefore be conserved, **Cei** (5) ; *erythronota* (*Salamandra*) Rafinesque 1818, proposed suppression, **Highton** (1) ; List of all names applied to Australian frogs, type localities, and current names, **Moore, J. A.** (2) ; Nomenclature of *Sphaenorhynchus* Tschudi 1838, *Dryomelictes* Fitzinger 1843, and *Sphoenohyla* Lutz & Lutz 1938, **Myers & Leviton** ; *Siredon* Wagler 1830, proposed suppression, **Smith & Tihen** (1) ; *tigrina* (*Salamandra*) Green 1825, proposed validation, **Smith & Tihen** (2) ; International Code of Zoological Nomenclature, **Stoll, Dollfus, Forest et al.**

Reviews.—Amphibia and Reptilia of Europe, by Mertens & Wermuth, **Bogert** ; Representative chordates, a manual for comparative anatomy, by C. K. Weichert, **Chamberlain** ; Salamandrian world, amphibians and reptiles, by R. Gerlach, **Gans** (1) ; Reptiles and amphibians, by R. Mertens, **Gans** (2) ; Poisonous amphibians and reptiles by Boys & Smith, **Grandison** (2) Living amphibians of the world, by D. M. Cochran, **Inger** ; The amphibians and reptiles of Illinois, by P. W. Smith, **Mills** ; Check list of the amphibians and reptiles of Canada and Alaska, by E. B. S. Logier & G. C. Toner, **Richmond** ; Die Amphibien und Reptilien Europas, by R. Mertens & H. Wermuth [**Rothman**] ; Poisonous amphibians and reptiles, recognition and bite treatment, by Boys & Smith, **Russell** ; A classification of living animals, by Lord Rothschild, **Simpson.**

Taxonomy.—Taxonomic divisions of the Amphibia, **Anon.** (3) ; *Ambystoma fluvinatum* Taylor, *A. rosaceum nigrum* Shannon and *A. r. sonoraensis* Shannon, relegated to the synonymy of *A. rosaceum* Taylor 1941, **Anderson, J. D.** (2) ; Key to neotenic

Eurycea in Texas, **Baker, J. K.**; Key to the amphibians of Florida, **Carr & Goin**; Key to Chilean species of *Eupsophus*, **Cei (2)**; Taxonomy of *Desmognathus fuscus* populations from Arkansas and Louisiana, **Chaney**; Relationship between *Xenopus laevis* and *Marsupiobdella africana*, **Dick**; Taxonomy of *Ambystoma macrodactylum* key, subspecies, **Ferguson (1)**; Systematic list of German Amphibia with key and figs., **Freytag (1)**; Taxonomic review of Roumanian subspecies of *Triturus cristatus*, **Fuhn & Freytag**; Systematics of the Argentine Brachycephalidae, **Gallardo (7)**; Status, taxonomic features and allocation of *Pseudis mantidactyla* Cope, *P. paradoxus* and *Lysapsus linellus* subspecies, **Gallardo (8)**; Keys, diagnoses and synonymies of hylid genera, **Goin (1)**; Key to known Centrolenidae of Ecuador, **Goin (2)**; Clarification of the status of species of *Eupsophus* in Chile, **Grandison (1)**; Taxonomic status of genera in the Arthroleptinae, Phrynobatrachinae and Cacosterninae, **Laurent (1)**; Examination of *Afrixalus* and *Hyperolius* types from Africa in Berlin Museum, **Laurent (3)**; Taxonomic status of *Rana chalconota* Schlegel, **Liem**; Status of new amphibians described or collected by Loveridge, **Loveridge**; Classificatory features of *Bombina* in Poland, **Michałowski (1)**; Classification of *Bombina variegata* L. and *B. bombina* L. using the L.T. indicator, **Michałowski (2)**; General taxonomic notes and keys to the frogs of New South Wales, **Moore, J. A. (2)**; *Gyrinophilus lutescens* (Rafinesque) status investigated, **Newcomer**; Clarification of the taxonomic relationship between *Rana aurora aurora* and *R. a. cascadae* through a series of reciprocal crosses, **Porter**; Of *Calyptocephalella gayi* (Dum. & Bibr.), **Reig (4)**; Possible significance of the postfemoral spot in some *Plethodon* spp. for speciative studies, **Reynolds**; Keys to families and species of Venezuelan frogs, **Rivero**; Key to amphibian species in Belgium, **Rose, L.**; Status of the genus *Crepidius*, Cope 1875, **Savage & Kluge**; Critical review of amphibian species and subspecies of Illinois, keys, **Smith, P. W.**; Some comments on anuran taxonomy and systematics based upon comparative anatomy, **Stadie**; Key to Indian species of *Ichthyophis*, **Taylor**; Taxonomy of *Bufo* from a biometrical viewpoint, **Terentyev (1)**; Systematic value of calcified hyoid and mesopodial elements of plethodontids, **Uzzell**; *Desmognathus perlapsus* Neill, relegated to the synonymy of *D. ocoee* Nicholls, **Valentine.**

Vernaculars.—Vernacular names of Provençal and Niçois amphibians, **Knoepffler (2)**; Aboriginal herpetological names, **Lindgren**; Spanish equivalents of English terms and measurements used in amphibian terminology, **Rivero**; List of Norwegian species with their Norwegian and Latin names, **Støp-Bowitz, Kolstad & Soot-Ryen**; Native names for *Cophixalus* spp. in New Guinea, **Tyler (2).**

STRUCTURE AND HISTOLOGY

General Works.—Amphibian anatomy, **Terent'ev (2).**

Alimentary System.—Histogenesis of intestinal epithelium of *Bufo vulgaris* larva, **Hoshino**; Mucinogenesis in intestinal goblet cells of *Rana tigrina*, **Kanwar (1)**; Histochemistry of isolated cell islands in *Bufo arenarum* pancreas, **Prieto Díaz & Tucci de Gorini (1)**; Oxyntic cells in the gastric glands of *Rana*, **Sedar**; Liver restoration in *Rana pipiens*, **Streett.**

Biochemistry.—Mucinogenesis in *Rana tigrina* goblet cells with special reference to morphology and histochemistry of cytoplasmic inclusions, **Kanwar (1)**; Histochemistry of *Bufo arenarum* skin, **Prieto Díaz, Gómez Dumm & Iturriza**; Tissues of *Bufo* fluorescent microscopically with absorbed vitamin A, **Radice (1).**

Biometrics.—Adult morphology and measurements of *Ambystoma rosaceum*, **Anderson, J. D. (2)**; New record size for *Desmognathus fuscus welteri* taken on The Pinnacle, Kentucky—♂ measures 170 mm. in total length after preserving, **Barton & MacCallum**; Morphological auxetic growth in *Bufo melanostictus*, **Church (1)**; Statistical analyses of *Ambystoma macrodactylum* races, **Ferguson (1)**; *Siren lacertina* grown in captivity from 350–950 mm., a size record, **Goin (4)**; Biometrical analyses of *Ptychadena oxyrhynchus* and *P. abyssinica* from Africa, **Guibé & Lamotte (1)**; Weights and linear measurements of the body and organs of *Ambystoma tigrinum*, **Latimer, Roofe & Feng**; Morphology and body measurements of *Rana tigrina* in Portuguese India, **Manaças**; Body proportions of *Hyla avivoca* and *H. versicolor* and natural hybrids from Alabama, **Mecham (2)**; The L.T. indicator (relation between length of body to that of thigh) used to classify *Bombina variegata* and *B. bombina*, **Michałowski (2)**; Biometrical analysis of *Bufo* and its taxonomic use, **Terentyev (1)**; Body proportions of adult *Bufo woodhousei* from South Dakota, **Underhill.**

Circulatory System.—Microscopical innervation of *Rana* and *Salamandra* hearts, **Abrahám**; Auxetic growth shown by *Bufo melanostictus* erythrocytes, **Church (1)**; Endothelial nuclei of extremity veins in *Rana*, **Donahue, Connor & Manner**; Myofilaments in the endothelial cells of *Rana* and *Triturus* capillaries, **Hama (2)**; Morpho-physiology of the ventricular loculi of *Rana ridibunda*, **Jitariu & Alexa (1)**; Vascularization of the hypophysis of *Triturus cristatus carnifex*, **Peyrot**; Fine vascularization of *Rana ridibunda* spinal cord, **Rakeewa**; Composition of the blood of ♂ and ♀ *Salamandra s. quadri-virgata*, **Saint-Girons**; Circulatory mechanism and heart anatomy of *Rana pipiens*, **Sharma.**

Cytology.—Fusion of nucleoli in cultured heart cells of *Triturus*, **Amenta**; Myelinization of the peripheral nervous system of *Rana*, **Borovyagin**; Histology of the optic tectum of *Rana esculenta*, **Capanna (1)**; Histology of the dorso-lateral area of Rospo in the anuran telencephalon, **Capanna (2)**; Histological alterations in the regeneration blastema of *Ambystoma*, **Deck (2)**; Cytological study of the pituitary gland of *Triturus viridescens*, **Dent (2)**; Relationship of macrophages to melanophore development during *Taricha* metamorphosis, **Duncan**; Nuclei and intercellular matrix variation during somite differentiation in *Taricha*, **Finnegan (3)**; Cytology of salivary enzyme—secreting tissues in amphibians, **Francis**; Electron microscope study of *Triturus* spermatozoa, **Furieri**; Histological study of macrothyrocytes, **Gabe**; Electron microscopy of centriole and flagellum of spermatid, **Gatenby**; Structure of *Discoglossus pictus* egg involucra, **Ghiara**; New features of frog cilium structure, brief account, **Gibbons**; Phase contrast refractometry study of *Rana* mitochondria, **Grzycki**; Nuclear

transplantation between 2 subspecies of *Xenopus laevis*, **Gurdon**; Fine structure of desmosomes in frog mesothelial cells, **Hama** (1); Histogenesis of intestinal epithelium of *Bufo vulgaris* larva with reference to tissue iron, **Hoshino**; Meiosis in coelomic and oviducal oocytes of *Triturus*, effect of heat shock on the first meiotic division, **Humphries** (2); Histology of seasonal changes of *Rana* testis and thumb pad, **Iwasawa & Asai**; Morphological and histochemical studies on frog oxyntic cells, **Kanwar** (2); Terminations of afferent nerve fibre in *Rana* muscle spindle, **Katz, B.**; Sex determination of *Bufo arenarum* interphase nuclei, **Laguens & Palatnik**; Yolk formation in frog oocytes, **Lanzavecchia**; Electron microscope study of epidermis differentiation in *Rana pipiens*, **Leeson & Threadgold**; Venous histology of *Rana pipiens*, in particular the perivascular melanophores, **Manner, Donahue & Conner**; Ultrastructure of myelinated nerve fibres and nodes of Ranvier in frog diencephalon, **Metuzals**; Histology of *Rana pipiens* thumb pads, **Parakkal & Ellis**; Histological study of effect of $KClO_4$ on various organs in *Xenopus*, *Rana* and *Triturus*, **Pflugfelder**; Cytochemistry and cytology of *Bufo arenarum* hypophysis, **Prieto Díaz, Iturriza & Gómez Dumm**; Fluorescent properties of the stratum cribosum of Katschenko in some Anura, **Radice** (2); On the formation of mitotic groove at end of mitosis during urodele egg cleavage, **Sentein** (2); Spermiogenesis of *Rana* as an example of cell differentiation, **Serra & Vicente**; Mitochondria of the small intestine of *Bufo marinus*, **Stanbury**; Fine structure of skin basement lamella and notochordal sheath of *Xenopus* larva, **Weber**; Cytology of *Triturus viridescens* oocyte nucleus, **Wischnitzer.**

Dentition.—Development, succession and replacement of teeth in *Hyla cinerea*, **Goin & Hester**; Of Anura from the Congo, **Skelton-Bourgeois** (2).

Excretory System.—Monolayer cultures of *Rana* renal cells, **Auclair** (1); Urinogenital system of ♂ *Rana sylvatica*, **Basu**; Fine structure of the urinary bladder of *Bufo marinus*, **Choi**; Fine structure of functional pronephros in 20 mm. *Ambystoma* larvae, **Christensen**; Examination of *Rana* kidney cells for mitochondria, **Grzycki**; Relationship between pronephros and haploid syndrome in *Rana* larva, **Rafferty, N. S.** (2).

Glands.—Skin gland development in *Rana pipiens* during treatment with thyroxine, **Bovbjerg & Kollross**; Sources and nature of salivary secretions in amphibians, **Francis**; The *manicotto glandulare* in larval Anura, its form, function and development within the different orders, **Griffiths.**

Glands : Endocrine.—Experimental morphogenesis of *Ambystoma* adrenal glands, **Anderton** (1) & (2); Thyroidectomy cells of *Necturus* hypophysis, **Aplington** (2); Development and structure of *Bufo viridis* parathyroids, **Boschwitz**; Pituitary gland of *Triturus* structure and ultrastructure, **Cardell**; Development of adrenal bodies in *Pleurodeles waltlii*, **Certain**; Sexual variation in the pituitary gland of *Triturus viridescens*, **Dent** (2); Comparative anatomy of the thyroid glands of Japanese frogs, **Iwasawa** (4); Pancreatic islets, a histological study, **Miller**; Separation of the hypophysis from the hypothalamus in *Triturus* and subsequent study of vascularization, **Peyrot**; Effect of $KClO_4$ on thyroid gland and hypophysis in *Rana*, *Xenopus* and *Triturus*, **Pflugfelder**; Cytochemistry and cytology of *Bufo arenarum* hypophysis, **Prieto Díaz, Iturriza & Gómez Dumm**; Pancreatic islets of *Taricha torosa*, **Wurster & Miller.**

Integument.—Homografting between black and white axolotls, **DeLanney, Johnson & Woodham**; Epidermis differentiation in *Rana pipiens* studied under electron microscope, **Leeson & Threadgold**; Histochemistry of *Bufo arenarum* skin, **Prieto Díaz, Gómez Dumm & Iturriza**; Fluorescent properties of the stratum cribosum of Katschenko in Anura, **Radice** (2); Description and occurrence of the post-femoral spot in *Plethodon*, **Reynolds**; Architectural regularity of *Triturus viridescens* subepidermal reticulum, **Schmidt, A. J.**; Bodies of Eberth in skin of frog tadpole, **Singer & Salpeter**; Fine structure of basement lamella of *Xenopus* larval skin, **Weber.**

Larvae.—Microstructure of *Rana* tadpole muscle changed through action of penicillin and streptomycin, **Dąbrowski**; Pronephric systems of larval amphibians quantitatively analysed, **Fox, H.** (1); Form and function of fore-gut in anuran larvae with reference to the *manicotto glandulare*, **Griffiths**; Replacement of larval basement lamella by adult-type basement membrane during metamorphosis in *Rana*, **Kemp** (2); Postembryonic multiplication of muscle fibres, **Lobyntsev**; Ultrastructure of *Triturus cristatus* larval branchial epithelium, **Marini**; Electron microscopical study on morphogenetic movement in *Triturus* embryo, **Matsumoto**; Role of melanoblasts in development of epidermal melanophores in *Ambystoma punctatum* larvae, **Napp, M.**; Embryology of corium of *Rana catesbeiana* tadpole, **Shimozawa**; Histological study of tadpole thyroid and hypophysis, **Stahl, Chevalier & Donnet**; Fine structure of *Xenopus* larval notochordal sheath, **Weber.**

Myology.—Ultrastructure of contracted and resting striated muscle, **Carlsen, Knappeis & Buchthal**; Fine structure of *Ambystoma* differentiating muscle, **Hay**; Sarcolemma of *Rana* skeletal muscle fibre, **Mauro & Adams**; Attachment of myofibrils to sarcolemma at muscle–tendon junction, **Muir**; Sarcotubular system of *Rana* skeletal muscle, **Muscatello, Andersson-Cedergren, Azzone & Decken**; Use of anuran head musculature in taxonomy and systematics, **Stadie**; Polarized light microscopy of *Rana* single muscle fibre, **Washio, Kakiuchi & Tamasige**; Importance of ilio-sacral movements and muscles producing them in anuran locomotion, **Whiting.**

Nervous System.—Microscopical innervation of *Rana* and *Salamandra* hearts, **Abrahám**; Myelinization of the peripheral nervous system of *Rana*, **Borovyagin**; Topographical study of cavities in the encephalon of *Alytes obstetricans* tadpoles, **Bounhiol & Rémy**; Hypoglossal (spino-occipital) nerve and related foramen in chondrocranium of *Salamandra maculosa* larva, **Fox, H.** (2); *In vivo* study of i..terneuronal synapses of *Rana* urinary bladder, **Grigor'eva**; Effect of limb ablation on neurones in *Xenopus* larvae, **Hughes & Lewis**; Terminations of afferent nerve fibre in *Rana temporaria* muscle spindle, **Katz, B.**; Origin, importance and fate of melanocytes in cerebral fluid of *Xenopus* larva, **Komnick**; Interneuronic connections in the urinary bladder of *Rana temporaria*, **Majorov**; Ultrastructure of myelinated nerve fibres and nodes of Ranvier in frog diencephalon, **Metuzals**; Fluorochroming

of supravital *Rana pipiens* nerve preparations, **Mielcarek**; *Rana ridibunda* spinal cord, fine vascularization, **Rakeewa**; Cerebellar nuclei and their homologization, **Rüdeberg**; Innervation and sensory lines of the cheek in amphibians and fishes, **Stensiö**; Fibroarchitectonics of *Rana esculenta* cerebral glia, **Szydlowska**; Ultrastructure of the synapse in sympathetic ganglions of frog, **Taxi**; Median eminence of the neurohypophysis, **Voitkevich (2)**; Innervation of the kidneys of *Bufo cinereus* and *Rana esculenta*, **Waleewa.**

Osteology.—†Cranial morphology of *Notobatrachus degiustoi*, **Casamiquela (2)**; Detailed account of *Rhyacotriton olympicus olympicus* cranial morphology, **Cloete**; Hypoglossal (spino-occipital) foramen in occipital crest of larval *Salamandra maculosa* chondrocranium, **Fox, H. (2)**; X-ray osteology studies on *Paramesotriton* and *Pachytriton*, **Freytag & Petzold**; Derivatives of the hyoid arch in Amphibia, **Guth (1)**; †Skull comparison of prehistoric vertebrates, **Hawes**; Detailed account of *Pseudotriton ruber ruber* cranial morphology, **Joubert**; Osteological characters of genera in the Arthroleptinae, Phrynobatrachinae and Cacosterninae, **Laurent (1)**; Parasphenoid of Caudata, figs., **Lebedkina**; Amphibian jaw mechanisms, **Olson**; Annual growth zones in amphibian skulls, **Peabody**; Systematic relationships of *Calyptocephalella* based on skeletal characters, **Reig (4)**; Skeletal anatomy of *Lepidobatrachus* compared with that of other Ceratophryinae, **Reig (5)**; Comparison of the Mexican-type and American-type *Bufo* skulls, **Sanders**; Osteological changes in the transition to terrestrial life, **Schmalhausen**; Comparison of anuran skulls and skeletons and their use in taxonomic and systematic studies, **Stadie**; Homologies of dermal bones in the cheek of amphibians and fishes, **Stensiö**; Influence of parathyroids on frog bone, **Talmage & Yoshida**; Calcified hyoid and mesopodial elements of plethodontid salamanders, **Uzzell**; Chondrocranium development of *Heleophryne purcelli* with special reference to palatoquadrate and sound-conducting apparatus, **Westhuizen**; Importance of the ilio-sacral joint in amphibian locomotion, **Whiting**; Origin and development of tetrapod vertebrae, **Williams, E. E.**

Reproductive System.—Urinogenital system of ♂ *Rana sylvatica*, **Basu**; Cloacal structure of *Paramesotriton deloustali*, **Freytag & Petzold**; Development of reproductive organs of ♀ *Rana temporaria* in yearly cycle, **Juszczyk**; Histochemical study of Bidder's organ in *Bufo arenarum*, **Prieto Díaz & Tucci de Gorini (2).**

Sense Organs.—Pineal system of Amphibia, its role in behaviour, **Adkins & Zweifel**; Fine structure of the amphibian stirnorgan, **Eakin (1)**; Photoreceptors in *Hyla regilla* frontal organ shown by electron microscopy, **Eakin (2)**; Photoreceptors in stirnorgan of *Hyla regilla* tadpole, **Eakin & Westfall (1) & (2)**; Examination of the tympanic cavity of Chilean species of *Eupsophus* to clarify status of species, **Grandison**; Glial elements in the toad retina, **Lasansky, A.**; Anatomy of vision in *Rana pipiens*, **Maturana, Lettvin, McCulloch & Pitts**; Adult morphology of *Bufo regularis* olfactory organs, **Michael**; Fine structure of *Triturus* retinal photoreceptors, **Yoshida, M.**

Teratology.—Partial denervation of larval salamander forelimb and its effect on regeneration, **Deck (1)**; Appearance of extra limbs after partial exogastrulation in *Triturus*, **Fautrez & Amano (1)**; Abnormal form of *Bufo arenarum*, figs., **Gaggero**; "Cauda bifida" in *Triturus cristatus* ♂, **Kiortsis**; Amphibian anomalies, **Reichenbach-Klinke**; Implant-induced supernumerary limbs in *Triturus viridescens*, **Ruben**; Some aspects of homograft-induced accessory limbs in *Triturus viridescens*, **Ruben & Stevens**; Two cases of anomaly of the external jugular veins in *Rana tigrina*, **Talesara**; Alterations in connective tissue and intestine produced by hypervitaminosis A in *Xenopus laevis*, **Weissmann (2).**

PHYSIOLOGY

General Works.—Critical thermal maxima in salamanders, **Hutchison.**

Biochemistry.—Factors influencing *Ambystoma tigrinum* Na balance, **Alvarado & Kirschner**; Effect of enzymes and pH on gonadotropic action of toad hypophysial hormones, **Astrada & Caligaris**; Ionic factors in electrogenesis of membrane components of frog slow muscle fibres, **Belton & Grundfest**; Electroferograms of Argentine *Bufo* seroproteins, **Bertini & Cei**; Acid phosphatase distribution in the regenerating medulla of *Triturus*, **Bertolini**; Localization of acid phosphatase in regenerating tails of *Triturus*, **Bertolini & Moretti**; Biochemistry of isolated *Bufo* kidney, **Bonet (1)**; Bioelectric potential and ion transport in isolated frog skin, **Campbell, Seward, Gilmer et al.**; Seroprotein analyses of *Leptodactylus chaquensis* and *L. ocellatus*, **Cei & Bertini (1)**; Serum proteins in allopatric and sympatric populations of *Leptodactylus ocellatus* and *L. chaquensis*, **Cei & Bertini (2)**; Changes in *Bufo melanostictus* blood chemistry and liver glycogen with increase in size, **Church (1)**; Deoxyribonucleases in embryonic and adult *Rana pipiens*, **Coleman**; Blood and urine Ca changes in parathyroidectomized *Rana pipiens*, **Cortelyou, Hibner-Owerko & Mulroy**; Histochemistry of cytoplasmic constituents of toad kidney during dehydration, **Deb & Mukherji**; Properties of *Rana esculenta* dehydrated muscles and heart, **Dydyńska**; Synthesis and electrophoretic distribution of antibodies in *Bufo marinus*, **Evans & Horton**; Nucleotide composition of nucleolar RNA studied in nucleoli isolated from frog ovarian eggs, **Finamore**; Enzyme changes during metamorphosis of *Rana grylio*, **Finamore & Frieden**; Effect of ethionine on development of muscular response in *Rana* embryo, **Flickinger**; Effect of insulin on glycogenolysis of perfused *Bufo* liver, **Flores**; Enzyme determinations in amphibian salivary secretions, **Francis**; Biochemical changes during anuran metamorphosis, **Frieden**; Isolation of 5-hydroxytryptamine from *Bufo arenarum* skin, **Frydman & Deuloffu**; RNA and protein synthesis in *Triturus cristatus* lampbrush chromosome loops, **Gall & Callan**; Histochemistry of *Discoglossus pictus* egg involucra, **Ghiara**; Action of catecholamines on melanophores of *Xenopus*, **Graham**; Muscle catalase estimation in *Rana temporaria* during adaptation to high temperatures, **Grainger**; Biochemical changes associated with *Diemictylus viridescens* second metamorphosis, **Grant, W. C.**; Enzyme activity in fore-gut of anuran larvae with reference to the *manicotto glandulare*, **Griffiths**; Blood coagulation mechanism in *Bufo marinus*, **Hackett**; Cholinesterase activity of the optic tectum of *Rana pipiens* after unilateral eye removal, **Hess**;

Enzymes in *Necturus* kidney, **Himmelhoch & Karnovsky**; Histochemistry of the polysaccharides of *Triturus* oviduct, **Humphries & Hughes**; Comparison of ninhydrin positive and phenolic substances of parotid gland secretions of three *Bufo* species and their hybrids, **Hunsacker, Alston et al.**; Mucinogenesis in *Rana tigrina* goblet cells with reference to histochemistry of cytoplasmic inclusions, **Kanwar (1)**; Chemistry of *Bufo* blood, **Lecuona**; Enzymatic synthesis of o-aminophenyl glucuronide by liver homogenate, **Lester & Schmid**; Glycogen distribution in the CNS, **Masai (1)**; Glycogen distribution in the subfornical organ, **Masai (2)**; Experimental work on carbohydrate metabolism, **Miller**; Fluorescence of tetracycline antibiotics in bones of *Bufo bufo*, **Muzii & Caravita**; Relation between the syntheses of actin and myosin in *Triturus* regenerating limb tissue, **Ogawa (2)**; Histochemistry of *Rana nigromaculata* kidney, **Okada**; Localization of acid and alkaline phosphatase in *Rana* pituitary, **Ortman & Fallon**; Succinic dehydrogenase activity in frog retina, **Ostrovsky (1)**; Acetylcholinesterase activity in frog retina, **Ostrovsky (2)**; Histochemical study of *Rana pipiens* thumb pads, **Parakkal & Ellis**; Glucose exchanges in *Bufo* isolated liver, **Perassi**; Histochemistry of isolated cell islands in *Bufo arenarum* pancreas, **Prieto Díaz & Tucci de Gorini (1)**; Histochemical study of *Bufo arenarum* Bidder's organ, **Prieto Díaz & Tucci de Gorini (2)**; Isolation of steroids from sexually active *Rana esculenta*, **Raunich (1)**; *Rana esculenta* presence of p-hydroxybenzylacetone in extracts, **Raunich (7)**; Histochemical changes in differentiating urodele pituitaries, **Rhodes & Dalton**; Histochemical study of *Rana* and *Bufo* liver, **Schmidt, F. C.**; Constitution of alkaloids isolated from *Salamandra atra* and *S. maculosa* skin glands, **Schöpf**; Distribution of lipids and evolution of lipid-containing structures during *Rana* spermiogenesis, **Serra & Vicente**; Stability of monoamine oxidase and inhibitory action of semicarbazide, **Smith, C. L.**; Oxidase activity in heart mitochondria, **Stolk (1)**; Two types of ribonucleic protein in nucleolus of *Triturus alpestris* intestinal carcinoma, **Stolk (4)**; Concentration of brain glycogen in *Bufo calamita*, **Stolk (5)**; Histochemical properties of skeletal muscle and surrounding connective tissue, **Stolk (7)**; Protein substrate of the "slow" and "fast" skeletal muscles of the frog, **Ushakov, V. B.**; Blood-sugar studies in *Rana ridibunda*, **Vlădescu**; Histochemical localization of cathepsin activity in *Xenopus laevis* tail, **Wróblewski.**

Body Temperature.—Daily changes in *Rana ridibunda* body temperature, **Pashkova & Sudarev**; Evolutionary aspects of role of pineal complex and subcommissural organ in thermoregulation, **Steyn.**

Circulation.—Ventricular circulation in frog heart studied with tracer substances, **Alexa & Boingeanu**; Coloured metabolites of p-dimethylamino-azobenzene (butter yellow) in blood of *Bufo arenarum*, **Bertini**; Electrophoretic analyses of *Leptodactylus chaquensis* and *L. ocellatus* serum, **Cei & Bertini (1)**; Haemoglobin content and sedimentation rate in *Rana hexadactyla* blood, **Cherian, Vasu & Krishnaswamy**; Haemoglobin concentration, packed cell volume and specific gravity of whole blood increase with size in *Bufo melanostictus*, **Church (1)**; Properties of *Rana esculenta* dehydrated heart, **Dydyńska**; Blood coagulation in *Bufo marinus*, **Fantl**; Scheme for blood coagulation mechanism in *Bufo marinus*, **Hackett**; Prothrombin–thrombin and fibrinogen–fibrin stages of *Bufo marinus* blood coagulation and thromboplastic activity, **Hackett & LePage**; Respiration and hemolysis of frog erythrocytes exposed to U.V. light, **Harvie & Maroney**; Physiology of the ventricular loculi of *Rana ridibunda*, **Jitariu & Alexa (1)**; Photomecanographic recordings of the ventricular wall movements in *Rana ridibunda* heart, **Jitariu & Alexa (2)**; Physiology of heart in frog, **Jullien, Cardot, Joly & Bride**; Permeability of the frog pericardium to calcium salts, **Jullien, Cardot, Joly & Petiau**; Blood pressure recordings in *Leptodactylus ocellatus* after drug injections, **Ladosky**; *Ambystoma tigrinum* heart physiology, **Laplaud, Tricoche & Gargouil**; Chemistry of *Bufo* blood, **Lecuona**; Shape changes and hemolysis of frog erythrocytes following treatment with various hemolysins, **Maroney**; Reactions of *Rana esculenta* skin capillaries in CO_2 and O_2 enriched atmosphere, **Poczopko**; Blood constituents of *Ambystoma tigrinum*, **Roofe**; Comparative study of red cells count and clotting time in blood of *Rana pipiens* colony, **Sleppy**; Electrical changes in heart on metamorphosis in *Ambystoma*, **Tricoche, Laplaud et al.**; Total blood volume of *Rana catesbeiana* determined by radioisotope methods, **Wilson, Hansard & Cole.**

Coloration: Pigments.—Response of amphibian skin pigments to pineal interference, **Adkins & Zweifel**; Variation and ontogenetic changes in *Ambystoma rosaceum* colour pattern, **Anderson, J. D. (2)**; Onset of pineal and hypophysial regulation of *Xenopus* melanophores, **Bagnara (2)**; Stimulation of *Rana pipiens* guanophores and melanophores by MSH peptides, **Bagnara (3)**; Coloration of New Zealand frogs with photos., **Barwick**; Red phase of *Plethodon cinereus* from New Brunswick, **Cook & Bleakney**; Paling of *Rana* tadpole melanophores through action of penicillin and streptomycin, **Dąbrowski**; Relationship of macrophages to melanophore development during *Taricha torosa* metamorphosis, **Duncan**; Melanophore changes in *Xenopus* in response to catecholamines, **Graham**; Probable aposematic and pseudaposematic functions of colour pattern in *Plethodon jordani jordani*, *P. j. shermani* and *Desmognathus ochrophaeus carolinensis* in Appalachian Mts., **Huheey**; Origin, importance and fate of melanocytes in *Xenopus* larva cerebral fluid, **Komnick**; Estimation of *Rana pipiens* melanophoric activity by *in vitro* bioassay, **Long & Guillemin**; Colour of *Rana tigrina* in Portuguese India, **Manaças**; Role of ionic factors in hormone action on vertebrate melanophore, **Novales**; Inheritance and distribution of *Acris crepitans* vertebral stripe colour, **Pyburn (1) & (2)**; Cytoplasmic control of leucophores in the tail fin of hybrid *Rana* tadpoles, **Sambuichi**; Effect of phenylthiourea on *Xenopus laevis* melanophores, **Sims (2)**; Melanophore-stimulating substance in *Hyla regilla* hypothalamus, **Thurmond**; Grafting and drug experiments on melanophores involved in tail darkening of hypophysectomized urodele larvae, **Vankin & Dalton**; Melanoconcentration seen in anuran larvae kept in solutions of 2-3-5-trimethyl-1-4-benzoquinone, **Vaz-Ferreira**; Movement of pigment granules in *Rana pipiens* melanocytes, **Wright & Lerner**; Physiological responses of amphibian melanophores, **Zimmerman & Dalton.**

Digestion.—Intestinal absorption of amino acids in *Rana clamitans*, **Gagnon**; Acid-secreting gastric mucosa of *Rana catesbeiana*, **Sedar.**

Diseases.—Natural incidence of renal adenocarcinoma in Vermont *Rana pipiens*, **Auclair (3)**; Serological analysis of Lucké renal adenocarcinoma in *Rana pipiens*, **Barch**; Observations on brains of *Triturus* infected with *Diplostomulum* showing tumours to be present allied to human mengioma, **Lautenschlager**; High incidences of transmissible kidney tumours in uninoculated laboratory maintained frogs, **Rafferty, K. A., Jr. & N. S.**; Ribonucleoproteins in the nucleolus of intestinal carcinoma of *Triturus*, **Stolk (2)**; Induction of hepatic cirrhosis in the axolotl, **Stolk (3)**; Two types of ribonucleic protein in nucleolus of *Triturus alpestris* intestinal carcinoma, **Stolk (4)**; Cutaneous fibroma in *Bufo b. japonicus*, **Stolk (8)**; Induced fluorescence of frog renal adenocarcinoma grown in tissue culture, **Tweedell.**

Effect of Chemicals and Temperature.—Influence of pH and toxic chemicals on *Bufo* testis, **Astrada**; Effect of sodium fluoroacetate on blood glucose levels in *Rana catesbeiana*, **Cole**; Effects of commercially prepared parathormone on Ca and P levels in *Rana pipiens*, **Cortelyou**; The action of toluidine blue on *Pleurodeles* regeneration, **Csaba, Bierbauer & Törö**; Role of Ca and Zn in responses of *Rana* sartorius muscle, **Edman & Grieve**; Anomalous activity of thyroxin analogs in tadpoles, **Frieden & Westmark**; Physiological changes in *Rana temporaria* during adaptation to high temperatures, **Grainger**; Treatment of *Xenopus laevis* with 4-methyl-2-thiouracil causing degranulation of the islets of Langerhans, **Guardabassi**; Ryanodine on muscle, comparative study, **Haslett & Jenden**; Effect of Ca reduction on electrical activities of *Rana* muscle membranes, **Hisada & Miyamoto**; Rates of acclimation and critical thermal maxima in salamanders, **Hutchison**; Action of methylcholantrene, cyanide and dinitrophenol on cutaneous hyperplasy of *Salamandra*, **Idelman**; Effects of narcotics on electrical activity of *Rana* nerve, **Il'inskii & Tertyshnik**; Inhibition of heart action through temperature variation in frog, **Jullien, Cardot, Joly & Bride**; Effect of aqueous $CuSO_4$ solutions on viability of *Rana pipiens*, **Kaplan & Yoh**; "End plate drug" action in twitch fibres of *Rana*, **Katz & Miledi**; Effect of thyroxin on skin basement lamella in *Rana* larvae, **Kemp (1)**; Effect of temperature on oxygen linkage in frog blood, **Kriger**; Temperature dependence of cholinesterase activity reduction rate in liver homogenates of *Rana*, **Kusakina**; Effect of drugs on *Leptodactylus ocellatus* blood pressure, **Ladosky**; Effect of chemicals on tadpole respiration, **Lewis & Frieden**; Effect of phenylthiourea on iodine binding in *Hyla* tadpoles, **Lynn & Dent (1)**; Effect of chlorotetracycline on *Bufo* and *Rana* larval tail regeneration, **Manelli (1)**; Postsynaptic effects of HC-3 at frog neuromuscular junctions, **Martin & Orkand**; Effects of alloxan and temperature on blood sugar, **Miller**; Action of serotonin (5-hydroxytryptamine) on amphibian metamorphosis, **Niaussat, P. & Mme.**; Effects of high temperatures on *Rana ridibunda*, **Pashkova & Sudarev**; Influence of Ca on K-contracture of "slow" and "fast" frog skeletal muscle fibres, **Pauschinger & Brecht**; Effect of $KClO_4$ on various organs in *Xenopus*, *Rana* and *Triturus*, **Pflugfelder**; Effect of benzoquinone on regeneration of the tail of larval *Bufo*, **Raunich (2)**; Changes in *Xenopus laevis* thyroid glands after treatment with phenylthiourea, **Sims (2)**; Treatment of tadpole thyroid and hypophysis with cortisone, **Stahl, Chevalier & Donnet**; 3-monohydroxycholanic acid treatment causing hepatic cirrhosis in *Ambystoma*, **Stolk (3)**; Effect of environmental temperature on *Bufo calamita* brain glycogen, **Stolk (6)**; Action of d-tubocurarine chloride on net flux of water across isolated frog skin, **Tercafs & Schoffeniels**; Action of temperature on *Rana* glomerular filtrate, **Uranga**; Development of inexcitability in muscle tissue and concentration of a chemical agent to which it is exposed, **Ushakov & Krolenko**; Effect of different ringer and monocationic solutions on tonus of *Bufo* stomach muscle, **Van Weel**; Effect of 2-3-5-trimethyl-1-4-benzoquinone on larval Anura, **Vaz-Ferreira**; Effects of temperature on carbohydrate metabolism in *Rana pipiens*, **Weiss, Matthews & Grant**; Vitamin A induced changes in connective tissue and intestine, **Weissmann (1)**; Accelerating effect of succinodinitril on *Ambystoma* spinal cord regeneration, **Winkelmann**; Effect of drugs on the dispersion of pigment granules in *Rana pipiens* melanocytes, **Wright & Lerner**; Effect of high temperature on induction of gonad masculinization by pituitary grafts in hypophysectomized frog larvae, **Yoshikura.**

Effect of Environment.—Influence of pH and toxic chemicals on *Bufo* testis, **Astrada**; Seasonal changes in quantity of fat and glycogen of *Bufo vulgaris*, **Bush**; Water metabolism of desert-inhabiting amphibians, **Chew**; Seasonal variation in the pituitary gland of *Triturus viridescens*, **Dent (2)**; Reduced activity of thyroxine in *Alytes* tadpoles during autumn, **Disclos & Bounhiol**; Environmental salinity preferences of *Rana cancrivora*, **Gordon, Schmidt-Nielsen & Kelly**; Early stages in adaptation to high temperatures in frogs removed from 8° to 23° C., **Grainger**; Effect of light on *Diemictylus viridescens* thyroid activity, **Grant & Waterman**; Seasonal and geographic variation in critical thermal maxima in salamanders, **Hutchison**; Nature of growth retarding effect when numbers of *Rana pipiens* are cultured together, **Rose, S. M. & F. C.**; Effect of darkness and cold on *Rana esculenta* thyroid gland, **Toutain.**

Electrophoresis.—Electrophoretic analyses of *Leptodactylus chaquensis* and *L. ocellatus* serum, **Cei & Bertini (1)**; Electrophoresis of blood proteins of *Bufo valliceps*, *B. fowleri* and their natural hybrid, **Dessauer, Fox & Volpe**; Electrophoretic distribution of antibodies in *Bufo marinus*, **Evans & Horton.**

Excretion.—Mode of excretion of ammonia and urea in *Xenopus laevis*, **Balinsky & Baldwin**; Biochemistry of *Bufo* isolated kidney, **Bonet (1)**; Perfusion of *Bufo* isolated kidney, **Bonet (2)**; Effect of acute dehydration of toad kidney on chemistry of glomerulus and tubules, **Deb & Mukherji**; Oxidative and hydrolytic enzymes in nephrons of *Necturus*, **Himmelhoch & Karnovsky**; Antidiuresis of *Rana esculenta*, **Jard & Morel**; Urine elimination in hypophysectomized *Bufo arenarum*, **Madoery de Bonet, Chiaraviglio & Lanfri**; Retention of urea by kidney tissue, **O'Dell & Schmidt-Nielsen**; Histochemistry of *Rana nigromaculata* kidney, **Okada**; Oxytoxin and temperature action on glomerular filtrate of *Rana*, **Uranga**; Ion and H_2O transport in the proximal tubules of the kidney of *Necturus maculosus*, **Whittembury.**

Experimental Studies.—Radiologic study of *Rana ridibunda* ventricular circulation, **Alexa & Boingeanu**; Influence of pH and toxic chemicals on *Bufo* testis, **Astrada**; Effect of enzymes and pH on toad gonado-

tropins, **Astrada & Caligaris**; Mediation of body lightening in *Xenopus* larvae by the pineal, **Bagnara (1)**; Determination of *Xenopus laevis* mode of excretion of ammonia and urea, **Balinsky & Baldwin**; Search for evidence of axial current flow in peripheral nerves of salamander, **Becker**; Analysis of coloured metabolites in *Bufo arenarum* blood after injection with p-dimethylaminoazobenzene, **Bertini**; Cutaneous nerve stimulation and generation of *Rana* spinal cord potentials, **Bravo & Fernandez de Molina**; Electrophysiology of lymph heart, **Castillo & Sanchez**; Haemoglobin content and sedimentation rate in *Rana hexadactyla* blood, **Cherian, Vasu & Krishnaswamy**; Water elimination and retention in *Bufo* after hypophysectomy, **Chiaraviglio (1)**; Histochemistry of toad kidney during acute dehydration, **Deb & Mukherji**; Physiological and biochemical properties of *Rana esculenta* dehydrated muscles and heart, **Dydyńska**; Fatigue in stimulated phasic and tonic fibres of frog muscle, **Eberstein & Sandow**; Electrophoretic distribution of antibodies in *Bufo marinus*, **Evans & Horton**; Clotting activity of *Bufo marinus* blood, **Fantl**; Uptake of Fe^{59} in *Rana pipiens*, **Fehrn**; Chemical and physical properties of nucleoli isolated from *Rana pipiens* mature ovarian eggs, **Finamore**; Electrical excitability of isolated skin of *Rana pipiens*, **Finkelstein**; *Bufo* perfused liver studies, **Flores & Dalmasso**; Isolation of 5-hydroxytryptamine from *Bufo arenarum* skin, **Frydman & Deuloffu**; Osmotic and ionic regulation studies on *Rana cancrivora* and *R. tigrina*, **Gordon, Schmidt-Nielsen & Kelly**; Effect of light on *Diemictylus viridescens* thyroid activity, **Grant & Waterman**; Electrical stimulation of *Rana* semi-circular canals, **Gribenski**; Degranulation of the cells of the islets of Langerhans in *Xenopus laevis*, **Guardabassi**; Investigation of blood clotting mechanism of *Bufo marinus*, **Hackett & LePage**; Autoradiographic study of origin of blastema in regenerating *Triturus viridescens* limb, **Hay & Fischman**; Measurements of critical thermal maxima in salamanders, **Hutchison**; Experimental hyperplasy of *Salamandra* skin, **Idelman**; Adaptation of frog somatic musculature to the action of urea, **Il'inskaya**; Radiobiological studies on normal and anaemic *Diemictylus viridescens*, **Jakowska, Nigrelli & Sparrow (2)**; Photomecanographic recordings of the ventricular wall movements in *Rana ridibunda* heart, **Jitariu & Alexa (2)**; Moulting in toads with pars distalis of hypophysis extirpated, **Jørgensen & Larsen**; Isolated retina of *Rana catesbeiana* used to show mechanism of light adaptation, **Lipetz**; *In vitro* bioassay for measuring melanophoretic activity in *Rana pipiens*, **Long & Guillemin**; Thyroid-stimulating hormone injection in two urodeles, **Lynn & Dent (2)**; Water metabolism studies on *Bufo arenarum*, **Madoery de Bonet, Chiaraviglio & Lanfri**; Postsynaptic effects of HC-3 at frog neuromuscular junction, **Martin & Orkand**; Effects of pancreatic, hypophysial and adrenal ablations on blood sugar, **Miller**; Localization of acid and alkaline phosphatase in *Rana* pituitary, **Ortman & Fallon**; Effect of light on succinic dehydrogenase activity in frog retina, **Ostrovsky (1)**; Acetylcholinesterase activity in frog retina, **Ostrovsky (2)**; Influence of experimentally produced atmospheres on *Rana esculenta* skin capillaries, **Poczopko**; Absorption and elimination of Ca^{45} injected into *Triturus cristatus*, **Pora & Ghircoiașiu**; Effect of hypophysectomy on rhythmic mitotic rate in larval corneal epithelium of *Ambystoma*, **Scheving & Chiakulas**; Histochemical study of *Rana* and *Bufo* liver, **Schmidt, F. C.**; Isolation and constitution of alkaloids from *Salamandra* skin glands, **Schopf**; Effect of phenylthiourea on *Xenopus laevis* melanophores, **Sims (2)**; Control of tryptophan pyrrolase activity in frog liver through injection, **Spiegel**; Experimental brain injuries and subsequent development of *Xenopus laevis*, **Srebro**; Treatment of tadpole thyroid and hypophysis with cortisone, **Stahl, Chevalier & Donnet**; Effectivity of pituitary implantations and hormone injections on *Rana* ovulation, **Štefanová & Romanovský**; Injection of herring sperm DNA into *Triturus alpestris* intestinal carcinoma, **Stolk (4)**; Effect of neurohypophysial hormones on water elimination in *Bufo arenarum*, **Taleisnik & Capmourteres**; Measurement of protein substrate in the "slow" and "fast" skeletal muscles of the frog, **Ushakov, V. B.**; Effect of continuous light stimulus removal on rhythmic activity of *Rana* eye, **Val'tsev**; Immuno-biological study of lens regeneration in *Triton taeniatus*, **Vyazov & Sazhina**; Use of progesterone in facilitation of pituitary-induced frog ovulation, **Wright & Flathers**; Physiological responses of amphibian melanophores, **Zimmerman & Dalton.**

Hormones.—Effect of enzymes and pH on toad gonadotropins, **Astrada & Caligaris**; Experiments to find out the hypophyseo-gonadal relation in the tropical Salientia, **Basu & Mondal (1)**; Action of pitressine and syntocine on *Bufo* isolated kidney, **Bonet (2)**; Discussion of the effect of parathyroidectomy on *Bufo viridis*, **Boschwitz**; Action of thyroxine on winter pause in development of toad tadpole, **Bounhiol & Disclos (2)**; Action of intermedin on thyroid function of *Rana esculenta*, **Čehović**; Effect of hypophysectomy on cutaneous water absorption in the toad, **Chiaraviglio (2)**; Steroids of the testis and Bidder's organ in *Bufo vulgaris*, **Chieffi & Lupo**; Effect of injections of various amounts of FSH on *Alytes* tadpoles, **Delsol & Flatin**; Thyroxine in *Bufo* blood, **Donoso**; Thyroid stimulation of *Rana temporaria* tadpoles, **Fabre & Marescaux (1) & (2)**; Comparative activity of thyroxin and analogs in tadpoles, **Frieden & Westmark**; Relationships of hormones to *Diemictylus viridescens* second metamorphosis, **Grant, W. C., Jr.**; Neurohypophysial hormones of non-mammalian vertebrates, **Heller & Pickering**; Response of *Bufo* larvae to thiourea, **Iwasawa (2)**; Effects of mammalian hypophysis extract on gonad development in frog larvae, **Iwasawa (3)**; Hormonal control of moulting in toads, **Jørgensen & Larsen**; Role of hormones in amphibian metamorphosis, **Kollross**; Cellular effects of thyroid hormone in different organs and tissues, **Lardy & Lee**; Thyroid stimulation by hormone administration in two urodeles, **Lynn & Dent (2)**; Role of hypophysis in *Bufo arenarum* water balance, **Madoery de Bonet, Chiaraviglio & Lanfri**; Physiological importance of *Rana pipiens* thyroid in winter, **Meisner**; Effects of various hormones on carbohydrate metabolism, **Miller**; Neurohypophysial hormones of *Rana esculenta*, **Morel, Maetz, Acher et al.**; Role of ionic factors in hormone action on the vertebrate melanophore, **Novales**; Influence of testosterone propionate on *Pleurodema nebulosa* gonad development, **Pisanó & Pizarro**; Action of mammalian hormones on hypophysectomized *Rana cyanophlyctis*, **Ramaswami & Lakshman**; Hormone induction of ovulation in Ranidae, **Štefanová & Romanovský**; Neurohypophysial hormones and water elimination in *Bufo arenarum*, **Taleisnik & Capmourteres**; Influence of parathyroids on frog bone, **Talmage & Yoshida**; *In vivo* assay of frog melanophore hormone, **Teague &**

Patton; Melanophore-stimulating substance in *Hyla regilla* hypothalamus, **Thurmond**; Effect of darkness and cold on *Rana esculenta* thyroid gland, **Toutain**; Thyroxine-induced metamorphosis in *Ambystoma*, heart electrical changes, **Tricoche, Laplaud et al.**; Action of oxytoxin on *Rana* glomerular filtrate, **Uranga**; Effect of hydrocortisone on changes in connective tissue and intestine caused by Vit. A, **Weissmann (1)**; Facilitation of pituitary-induced frog ovulation by progesterone in autumn, **Wright & Flathers**; Induction of gonad masculinization by pituitary grafts in heat-treated hypophysectomized frog larvae, **Yoshikura.**

Laboratory Technique.—Cultivation of monolayer cultures of *Rana* renal cells, **Auclair (1) & (2)**; Use of *Bufo melanostictus* for the assay of human chorionic gonadotrophin, **Banik**; Automatic recording of electrical potential and ion transport in frog skin, **Campbell, Seward, Gilmer et al.**; Hypodermic probe using fibre optics, **Capellaro, Kapany & Long**; Demonstration of thyroxine in *Bufo* blood, **Donoso**; Thyroid injection of *Rana* with guinea-pig serum, **Fabre & Marescaux (2)**; Histochemical techniques used in the study of macrothyrocytes, **Gabe**; Autoradiographic study using tritiated thymidine to follow origin of blastema in regenerating *Triturus* limb, **Hay & Fischman**; Paper chromatography of neurohypophysial extracts, **Heller & Pickering**; Photomecanographic recordings of the ventricular wall movements in *Rana ridibunda* heart, **Jitariu & Alexa (2)**; Quinaldine as an anaesthetic for *Siredon mexicanum*, **Katz, R. M.**; Fluorochroming of supravital nerve preparations of *Rana pipiens*, **Mielcarek**; Technique for microscopic bioassay of melatonin, **Mori & Lerner**; *In vivo* assay of frog melanophore hormone, **Teague & Patton**; Iodoradiothyroidectomy of *Bufo arenarum*, **Trivelloni, Donoso & Bur**; Tissue cultures of frog renal adenocarcinoma and normal kidney, **Tweedell**; Determination of *Rana catesbeiana* total blood volume by radioisotope methods, **Wilson, Hansard & Cole**; Preparation of monolayer cell cultures from *Rana* tissues, **Wolf, Quimby, Pyle & Dexter**; Use of progesterone in facilitation of pituitary-induced frog ovulation in autumn, **Wright & Flathers**; Tissue culture experiments with amphibian melanophores, **Zimmerman & Dalton.**

Lymphatic System.—Electrophysiology of lymph heart, **Castillo & Sanchez.**

Metabolism.—Pineal system and amphibian metabolism, **Adkins & Zweifel**; Metabolism of p-dimethylaminoazobenzene (butter yellow) in *Bufo arenarum*, **Bertini**; Age changes in collagen-fibres of *Xenopus laevis*, **Brocas & Verzár**; Metabolic rate of *Rana* during starvation, **Fanslow**; Effect of insulin on glycogenolysis of perfused *Bufo* liver, **Flores**; Effect of temperature on inactivation of liver cholinesterase in *Rana*, **Kusakina**; Carbohydrate metabolism, **Miller**; Seasonal changes in stored food products of *Rana pipiens*, **Mizell, S.**; Effect of thyroxine on protein synthesis in *Rana catesbeiana* tadpoles, **Paik & Cohen**; Glucose exchanges in *Bufo* isolated liver, **Perassi**; Absorption and accumulation of vitamin A_1 in *Bufo* tissues, **Radice (1)**; Tryptophan pyrrolase activity in liver of adult *Rana*, **Spiegel**; Diurnal changes in topographical glycogen distribution in *Bufo calamita* brain, **Stolk (5)**; Blood-sugar studies in *Rana ridibunda* and hyperglycemia production, **Vlădescu**; Effects of temperature and insulin on carbohydrate metabolism in *Rana pipiens*, **Weiss, Matthews & Grant**; Hypervitaminosis A in *Xenopus laevis*, **Weissmann (2)**; Blood sugar studies in *Rana catesbeiana*, **Wright, P. A.**; Blood glucose values and pancreatic islet morphology of *Taricha torosa*, **Wurster & Miller.**

Muscular Activity.—Ionic factors in electrogenesis of membrane components of frog "slow" muscle fibres, **Belton & Grundfest**; Tension of thermic contraction of *Xenopus laevis* tendon-fibres in relation to age, **Brocas & Verzár**; Striated muscle at different degrees of stretch, **Carlsen, Knappeis & Buchthal**; Properties of *Rana esculenta* dehydrated muscles, **Dydyńska**; Fatigue in phasic and tonic fibres of frog muscle, **Eberstein & Sandow**; Role of Ca and Zn in electrical and mechanical responses of *Rana* sartorius muscle, **Edman & Grieve**; Electrophysiology of *Rana esculenta* muscle fibres, **Etzensperger (1)**; Microphysiology of striated muscle fibres of *Rana esculenta*, **Etzensperger (2)**; Br– action on excitation, contraction coupling in *Rana* skeletal muscle, **Frank**; Spontaneous spike discharges of vascular smooth muscle, **Funaki, S.**; Movement of *Rana* muscle K, **Harris & Sjodin**; Stimulation of somatic musculature of frog, **Il'inskaya**; "End plate drug" action in twitch fibres of *Rana*, **Katz & Miledi**; Sodium transport in frog muscle, stimulated by lactate and insulin, **Kernan**; Rate of output of Ca-45 loaded on frog sartorius muscle in different media, **Koketsu & Miyamoto (2)**; Functional purpose of tonic myons in regeneration, **Koloss**; Inhibition of mechanical responses of frog muscles by K at low temperature, **Lorković**; Frog striated muscle potentials, **Nasledov**; Synthesis of actin in early *Triturus* embryos exposed to X-rays, **Ogawa (1)**; Synthesis of contractile proteins in *Triturus* regenerating limb tissue, **Ogawa (2)**; Synthesis of skeletal muscle proteins in *Triturus* embryo treated with glucuronic acid and related compounds, **Ogawa & Karube**; Influence of Ca on K-contracture of "slow" and "fast" frog skeletal muscle fibres, **Pauschinger & Brecht**; Calcium influx in frog rectus abdominus during contraction and at rest, **Shanes**; Muscular dephosphorylation in *Bufo bufo japonicus*, **Stolk (7)**; Protein substrate of the "slow" and "fast" skeletal muscles of the frog, **Ushakov, V. B.**; Cytophysiological analysis of the reaction of muscle fibres under the influence of urea, **Ushakov & Krolenko**; Effect of hypo-, iso-, and hypertonic ringer and monocationic solutions on tonus of *Bufo* stomach muscle, **Van Weel**; Electrical inexcitability of the synaptic membrane in skeletal muscle fibres of *Rana pipiens*, **Werman**; Electrophysiological study of the effects of anaesthetics on isolated frog muscle fibres, **Yamaguchi.**

Nervous System.—Search for evidence of axial current flow in peripheral nerves of salamander, **Becker**; Spinal cord potential generation by cutaneous nerve stimulation in *Rana*, **Bravo & Fernandez de Molina**; Brain inhibition of pars intermedia function in *Rana pipiens*, **Etkin, Levitt & Masur**; Br– action on excitation-contraction coupling in *Rana* skeletal muscle, **Frank**; Effects of narcotics on electrical activity of *Rana* nerve, **Il'inskii & Tertyshnik**; Effect of nerve fibres on mitotic activity in regenerating limbs of *Triturus* adults, **Inoue, S.**; Release of Ca-45 from frog nerves during electrical activity, **Koketsu & Miyamoto (1)**; Membrane activity of denervated *Rana* muscle, **Levine**; Effects

of axon severance in cholinergic neurones of *Xenopus* larvae, **Lewis & Hughes**; Relation of the central and autonomic nervous systems to the regeneration of limbs in adult and larval urodeles, **Liversage**; Postsynaptic effects of HC-3 at frog neuromuscular junctions, **Martin & Orkand**; Neurobiological study of glycogen distribution in the CNS, **Masai (1)**; Comparative neurological study on respiratory enzymic activity in the CNS, **Masai & Matano**; Sympathetic innervation of frog muscle, **Nasledov**; Optico-vegetative regulatory mechanisms of the diencephalon of *Rana*, **Oksche**; Spinal cord response to hind limb amputation in larval *Pseudacris*, **Pearson & Kollross**; Nervous coordination during parabiosis of embryonic Anura, **Rossi (4) & (5)**; Mechanism of post-tetanic hyperpolarization in frog myelinated nerve fibres, **Straub.**

Osmotic Relations : Water Balance.—Water metabolism of desert amphibians, **Chew**; Water elimination and retention in *Bufo* after hypophysectomy, **Chiaraviglio (1)**; Effect of hypophysectomy on cutaneous water absorption in the toad, **Chiaraviglio (2)**; Osmotic studies of amphibian eggs, **de Luque & Hunter, A. S. & F. R.**; Functions of amphibian egg involucra in water metabolism of egg and embryo, **Ghiara**; Osmotic and ionic regulation in *Rana cancrivora* and *R. tigrina*, **Gordon, Schmidt-Nielsen & Kelly**; Water loss recorded in *Rana temporaria* during adaptation to high temperatures, **Grainger**; Rates of desiccation and rehydration of *Plethodon cinereus* eggs, **Heatwole (2)**; Relation of substrate moisture to absorption and water loss in *Plethodon cinereus*, **Heatwole & Lim**; Effect of non-mammalian pituitary extracts on frog water relations, **Heller & Pickering**; Water metabolism studies on *Bufo arenarum*, **Madoery de Bonet, Chiaraviglio & Lanfri**; Evolutionary aspects of role of pineal complex and subcommissural organ in water-metabolism, **Steyn**; Water elimination by *Bufo arenarum* kidney, **Taleisnik & Capmourteres**; Action of d-tubocurarine chloride on net flux of water across isolated skin of *Rana*, **Tercafs & Schoffeniels**; Role of H_2O-regulating mechanisms in morphogenesis, **Tuft (2).**

Pregnancy Diagnosis.—New biological test for the early diagnosis of pregnancy using ♂ *Rana esculenta*, **Frassineti & Lanza**; Sexual cycles of some European amphibians in relation to gonadotropin amounts, **Lanza (2).**

Regeneration.—Tissue activation in *Triturus* limb stumps before blastema formation, **Anton**; Effects of ribonuclease on regenerating limbs of *Triturus*, **Bodemer**; Wolffian regeneration of the crystalline lens in *Pleurodeles*, **Borsuk & Popov**; Review of regeneration in Amphibia including analysis of the regenerative process, effects of irradiation on regenerates, regression and regeneration under abnormal conditions and abnormalities, **Brunst**; Pineal regeneration in developing *Taricha torosa*, **Cintron & Kelly**; Regeneration of extremities of *Pleurodeles* under the action of toluidine blue, **Csaba, Bierbauer & Törö**; Effects of denervation on regeneration of larval salamander forelimb, **Deck (1)**; Histological effects of partial denervation and amputation in *Ambystoma* forelimbs, **Deck (2)**; Lens regeneration from the cornea in *Xenopus laevis*, **Freeman & Overton**; Inhibition of lens regeneration by implanted lenses in eyes of adult *Triturus viridescens*, **Frost**; Influence of tail skin, epidermis and dermis on forelimb regeneration in axolotl, **Glade & Scott**; Regeneration of the gut in *Rana pipiens*, **Goodchild**; Review of limb regeneration, **Goss**; Chemically conditioned growth retardation in regenerating *Xenopus* larval tails, **Hahn, Niehus, Scholl & Lehmann**; Regeneration and stability of *Rana* lateral line organs, **Helff**; Optic nerve regeneration in *Rana temporaria*, **Jacobson, M.**; Tail regeneration in *Triturus* and *Salamandra*, **Kiortsis & Droin**; Role of tonic myons in physiological and reparative regeneration, **Koloss**; Regeneration of transected nervous connections in the brain of metamorphosed *Xenopus laevis*, **Kwiatkowski**; Regeneration from implanted dissociated cells of *Siredon*, **Lagan**; Effect of chlorotetracycline on *Bufo* and *Rana* larval tail regeneration, **Manelli (1)**; Regeneration of isolated spinal medulla segment in *Triturus* adult, **Marini & Margotta**; Self-differentiation of *Ambystoma* limb regenerate transplanted with normal and reversed orientation after digital plate removal, **Michael & Faber**; Synthesis of contractile proteins in *Triturus* regenerating limb tissue, **Ogawa (2)**; Regeneration in the intestine of adult urodeles, **O'Steen (1) & (2)**; Effects of X-rays on regenerating limb and tail blastemata in *Ambystoma* larvae, **Pietsch (1)**; Myogenesis during limb regeneration in *Ambystoma* larvae, **Pietsch (3)**; Part played by skin and internal tissues during *Triturus* limb regeneration, **Rahmani & Kiortsis**; Tail regeneration of larval *Bufo vulgaris*, **Raunich (2)**; Lens regeneration in *Triturus* from intra-ocular, iris implants in the presence of the host lens, **Reyer**; Regenerative capacity of blastemal cells of *Salamandra* and *Siredon*, **Roguski**; Developmental capacity changes of blastemal cells of axolotls, **Skowron & Walknowska**; Liver restoration in *Rana pipiens*, **Streett**; Immuno-biological study of lens regeneration in *Triton taeniatus*, **Vyazov & Sazhina**; Liver regeneration in *Triturus viridescens*, **Williams, D. D. (2)**; Acceleration of *Ambystoma* spinal cord regeneration through action of succinodinitril, **Winkelmann**; Attraction of neoblasts to injured surfaces, cellular study of regeneration, **Wolff**; Cathoptic activity in *Xenopus laevis* tail during regeneration, **Wróblewski & Grzybek.**

Reproduction.—Effect of androgenic hormone on gonadial development in *Hynobius nebulosus* larvae, **Amanuma**; Research into material forming ♀ genital region in *Rana dalmatina*, **Dechambe**; Physiological processes associated with sperm emission in *Rana pipiens*, **Giltz**; Effect of testosterone propionate on *Pleurodema nebulosa* gonad development, **Pisanó & Pizarro**; Induction of gonad masculinization by pituitary grafts in heat-treated hypophysectomized frog larvae, **Yoshikura.**

Respiration.—Effect of adrenaline on the respiration of *Discoglossus*, **Avarguès**; Respiratory measurements on *Leptodactylus albilabris* tadpoles, **Candelas, Ortiz, Vásquez & Felix**; Pulmonary eosinophilia in amphibians, **Dokov**; O_2 consumption and body weight in *Rana*, **Fanslow**; Oxygen and glucose liberation from *Bufo* perfused liver, **Flores & Dalmasso**; Respiration measurements during adaptation to high temperatures in *Rana temporaria*, **Grainger**; Measurement of respiration and haemolysis of ultraviolet irradiated frog erythrocytes, **Harvie & Maroney**; Effect of temperature on O_2 linkage in frog blood, **Krüger**; Respiratory enzyme changes during frog embryogenesis, **Lang & Grant**; Respiratory enzymic activity in the CNS, **Masai &**

Matano ; Observations on *Rana esculenta* respiration in experimentally produced atmospheres, **Poczopko ;** Influence of dietary factors and hormones on metabolism of adult and larval *Rana*, **Pryor & Tipton ;** Cutaneous respiration, **Vellard.**

Secretion : External.—Effect of frog skin secretions on muscle, **Bartha, Faiszt & Jendrassik ;** Nature of salivary secretions in Amphibia, **Francis ;** Chromatographic patterns of parotid gland secretions of *Bufo* species and their hybrids, **Hunsacker, Alston et al.**

Secretion : Internal.—Neurosecretion during metamorphosis of anurans, **Boitkevich ;** Bile pigment excretions, **Lester & Schmid ;** Changes associated with beginning of secretion in differentiating urodele pituitaries, **Rhodes & Dalton ;** Humoral effect of neurosecretion of preoptic nuclei, **Voitkevich (1).**

Sense Organs.—Influence of illumination on crystalline lens regeneration in *Pleurodeles*, **Borsuk & Popov ;** Light absorbing properties of visual pigments before and after extraction, **Dartnall ;** Spectral sensitivity of receptors of frog's retina, **Donner ;** Stimulation of single ganglion cell of frog retina by light substitution, **Donner & Rushton (1) ;** Rod-cone interaction in frog retina, **Donner & Rushton (2) ;** Standing potentials in the eye of *Rana pipiens*, **Dzendolet (1) ;** Effect of electrodes on the ERG of *Rana pipiens*, **Dzendolet (2) ;** Photoreceptors in *Hyla regilla* frontal organ, **Eakin (2) ;** Role of semicircular canals of *Rana* in maintenance of posture, **Gribenski ;** Recovery of electrical activity in *Rana* optic tectum during optic nerve regeneration, **Jacobson, M ;** Isolated retina of *Rana catesbeiana* used to show mechanism of light adaptation, **Lipetz ;** Lens proteins of *Rana pipiens* compared with those of chick, **Maisel & Langman ;** Physiology of vision in *Rana pipiens*, **Maturana, Lettvin, McCulloch & Pitts ;** Effects of metabolic inhibitors and narcotics on the ^{32}P-outflux from frog retina, **Oki & Honjo ;** Location of succinic dehydrogenase in frog retina and effect of light on its activity, **Ostrovsky (1) ;** Acetylcholinesterase activity in frog retina, **Ostrovsky (2) ;** Excitation pools in the frog's retina, **Rushton ;** Polarization of the retina and development of vision in *Ambystoma punctatum*, **Stone ;** "On" and "off" responses in the lower olfactory pathways, **Takagi & Shibuya ;** Changes in *Rana* retinal electrical activity due to after-effect of constant light stimulus, **Val'tsev.**

Toxins.—Action of tetanus toxin in *Rana temporaria*, **Rowson.**

Transplants, Implants, Grafts.—Cellular changes in *Necturus* pituitary following thyroidectomy, **Aplington (1) ;** Transfer of primordial germ-cells in *Xenopus*, **Blackler & Fischberg ;** Transplantation of genetically marked nuclei in the axolotl, **Briggs, Signoret & Humphrey ;** Homografting of sexually mature *Siredon mexicanum*, **DeLanney ;** Production of gill-lessness in newts and axolotls through transplantation of embryonic flank ectoderm to gill-forming area, **DeLanney & Neal ;** Germ-plasm in relation to nuclear transplantation in *Rana*, **Di Berardino (1) ;** Inhibition of lens regeneration by implanted lenses in eyes of adult *Triturus viridescens*, **Frost ;** Morphogenesis and histogenesis of *Triturus* cerebral tissue explants, **Gallera ;** Transplantation experiments in the genital region of embryonic *Bufo bufo*, **Ghirardelli (1) & (2) ;** Homograft reaction studies in *Rana pipiens* using C^{14} labelled glycine, **Hartung ;** Homograft studies of developing limb bud area of *Rana pipiens* tadpoles, **Hartung & Laflamme ;** Transplantation experiments between *Rana pipiens* and *R. esculenta* eggs, **Hennen ;** Effect of limb ablation on neurons in *Xenopus* larvae, **Hughes & Lewis ;** Notochord formation in explant from *Hynobius nebulosus* gastrula, **Ikushima ;** Syncoelous parabiosis of adult *Diemictylus viridescens*, **Jakowska ;** Development of regeneration blastemas implanted into the brain of *Xenopus laevis*, **Jordan ;** Intraspecific nuclear transplantation in *Rana pipiens*, **McKinnell ;** Successful intestine–body wall anastomoses in *Rana* spp., **Massaro ;** Xenoplastic adrenal transplants into post-metamorphic frogs from *Triturus*, **Mizell, M. ;** Development of muscle and cartilage following deplantation of regenerating limb blastemata of *Ambystoma* larvae, **Pietsch (2) ;** Implantation of *Rana* embryos into eyes of adult frogs, **Rafferty, N. S. (1) ;** Pronephric transplantation between $2n$ and n embryos of *Rana pipiens*, **Rafferty, N. S. (2) ;** Homologous implantations of embryos into adult *Rana pipiens*, **Rafferty, N. S. (3) ;** Development of urodele transplants in anuran tadpole hosts, **Rossi (1) ;** Transplantation studies of nervous system development in *Rana* and *Bufo*, **Rossi (3) ;** Parabiosis experiments with embryonic *Rana esculenta*, **Rossi (5) ;** Some aspects of homograft-induced accessory limbs in *Triturus viridescens*, **Ruben & Stevens ;** Laterality of induced limbs obtained through xenoplastic transplantation of *Bufo* limb bud in *Triturus* larvae, **Saito ;** Nuclear transfer experiments between *Rana n. nigromaculata* and *R. n. brevipoda*, **Sambuichi ;** Sexual differences shown in *Triturus viridescens* skin homografts, **Squadroni & Wolsky ;** Autografts of whole and lateral half forearm regenerates on X-irradiated adult newt arms, **Stinson ;** Transplantation experiments with cutaneous fibroma in *Bufo b. japonicus*, **Stolk (8) ;** Inhibitory effect of colchicine on *Bufo b. japonicus* transplantable cutaneous fibroma, **Stolk (9) ;** Cytology of activated *Rana pipiens* eggs receiving a transplanted blastula nucleus, **Subtelny & Bradt (1) ;** Transplantations of blastula nuclei into activated *Rana pipiens* eggs from body cavity and uterus, **Subtelny & Bradt (2) ;** Actively acquired tolerance to skin heterografts in *Rana arvalis*, **Vyazov & Sorokina ;** Liver grafting experiments on *Triturus viridescens*, **Williams, D. D. (1).**

X-rays etc.—Radiologic study of *Rana ridibunda* ventricular circulation using tracer substances, **Alexa & Boingeanu ;** Uptake of ^{32}P by the iris at the beginning of lens regeneration in *Triturus*, **Eguchi & Ishikawa ;** Uptake of Fe^{59} in *Rana pipiens*, **Fehrn ;** Use of C^{14} labelled glycine to study homograft reaction in *Rana pipiens*, **Hartung ;** Respiration and haemolysis of ultraviolet irradiated frog erythrocytes, **Harvie & Maroney ;** Cell proliferation and migration during blastema formation in regenerating *Triturus viridescens* limb studied by autoradiography, **Hay & Fischman ;** Effects of chronic gamma irradiation on *Diemictylus viridescens* adults, **Jakowska, Nigrelli & Sparrow (1) ;** Radiobiological studies on normal and anaemic *Diemictylus viridescens*, **Jakowska, Nigrelli & Sparrow (2) ;** Release of Ca-45 from frog nerves during electrical activity, **Koketsu & Miyamoto (1) ;** Rate of output of Ca-45 loaded on frog sartorius muscle in Ca-free and K-rich media, **Koketsu & Miyamoto (2) ;** Effect of propylthiouracil on O_2 consumption and radioiodine metabolism of *Rana pipiens* in winter, **Meisner ;** Exchange of C^{14} labelled urea in frog kidney tissue *in vitro*, **O'Dell & Schmidt-Nielsen ;** Sensitivity

to X-rays of actin synthesis in early *Triturus* embryos, **Ogawa (1)**; Effects of metabolic inhibitors and narcotics on the ^{32}P-outflux from frog retina, **Oki & Honjo**; Distribution of radioactive cells during regeneration of the adult newt intestine, **O'Steen (2)**; Forelimb regeneration; an autoradiographic study of *Triturus*, **O'Steen & Walker**; RQ and $C^{14}O_2$ incorporation during *Bufo bufo* development, **Petrucci**; Effects of X-rays on regeneration in *Ambystoma* larvae, **Pietsch (1)**; Restoration of regenerative property in X-ray inhibited axolotl extremities by means of proteins, nucleic acids and lyophilized tissues, **Polezhaev, Teplits & Ermakova**; Absorption and elimination of Ca^{45} injected into *Triturus cristatus*, **Pora & Ghircoiaşiu**; X-ray irradiation study of part played by skin and internal tissues in *Triturus* limb regeneration, **Rahmani & Kiortsis**; Ca^{45} measurement of calcium influx in frog rectus abdominus, **Shanes**; Effects of exposure of *Rana pipiens* to massive X-irradiation, **Smith & Thomson**; Effects of normal autografts of whole and lateral half-forearm regenerates on X-irradiated *Triturus* arms, **Stinson**; Iodoradiothyroidectomy of *Bufo arenarum*, **Trivelloni, Donoso & Bur**; X-ray electroretinogram of *Rana* recorded with small doses of X-rays, **Veninga**; Radioisotopes used to determine *Rana catesbeiana* total blood volume, **Wilson, Hansard & Cole**; Microautographic investigation of catheptic activity in *Xenopus laevis* tail, **Wróblewski & Grzybek.**

REPRODUCTION AND SEX

General Works.—Reproductive potential of ♀ *Microhyla olivacea*, **Henderson**; *Rana temporaria* in Poland, **Juszczyk.**

Hybridization.—Inter- and intragroup genetic compatibility in *Bufo*, **Blair, W. F. (3)**; Intergradation between *Bufo spinulosus* populations in Chile, **Cei (5)**; Changes in DNA and RNA during embryonic development of merogonic combination *Triton palmatus* ♀ × *T. cristatus*, **Chen & Zeller**; Racial hybridization in *Rana pipiens*, **Fowler**; Hybridization and allotriploidy in *Triturus viridescens*, **Hughes, N. (2)**; Hybridization and heteroploidy in *Triturus viridescens* subspecies, **Hughes, W. N.**; *Bombina bombina* × *B. variegata* in Czechoslovakia, **Lác (1)**; Artificial hybridization between some hylid frogs, **Littlejohn (2)**; Artificial hybridization between *Rana areolata* and *R. pipiens*, **McAlister (1)**; Natural hybridization between *Hyla versicolor* and *H. avivoca* recorded in Alabama and production of viable hybrids in laboratory, **Mecham (2)**; Comments on hybrid inviability between *Rana sylvatica* and *R. pipiens*, **Moore, J. A. (1)**; Hybridization experiments with Australian frogs, **Moore, J. A. (2)**; Experimental crosses between *Rana aurora aurora* and *Rana a. cascadae* to determine taxonomic relationship, **Porter**; List of recent hybrid crosses with U.S. species of *Hyla*, **Pyburn & Kennedy**; Antigen studies of *Bufo bufo* × *B. viridis* and reciprocal cross, **Ranzi, Citterio & Samuelli**; Derivation of diploid nucleo-cytoplasmic hybrids from *Rana nigromaculata brevipoda* cytoplasm and *R. n. nigromaculata* nuclei, **Sambuichi**; Indications for the hybrid origin of *Bufo terrestris*, **Sanders**; *Taricha* hybrids, long-term project in Sonoma Co., **Twitty (1)**; Artificially produced *Taricha* hybrids used for fertility tests and genetic analysis of species characteristics, **Twitty (2).**

Isolating Mechanisms.—Vocalization as an isolating mechanism in frogs, **Martof (1)**; Reproductive isolating mechanisms in Anura, **Mecham (3)**; *Rana cascadae* and *R. aurora* shown to be reproductively isolated and incapable of interbreeding, **Porter**; Reproductive isolating mechanisms between different local races of Japanese newts, *Triturus pyrrhogaster*, **Sawada.**

Reproduction.—Mating behaviour of *Euproctus asper* in captivity, **Ahrenfeldt**; Calling and spawning seasons in a mixed anuran population in Texas, **Blair, W. F. (2)**; Egg deposition in 5 northeastern U.S.A. species of *Ambystoma*, **Brandon (2)**; *Leptodactylus albilabris* reproduction and development, **Dent (1)**; Breeding patterns of *Ambystoma macrodactylum*, **Ferguson (1)**; Reproductive cycle of *Hyla raddiana* in Argentina, **Gallardo (4)**; Spawning of *Hymenochirus boulengeri*, **Haas**; Of *Necturus*, **Harris, J. P., Jr.**; Biennial sexual cycle of ♀ *Salamandra s. quadri-virgata* in the Hautes-Pyrénees, **Joly, J.**; Sexual cycles of some European amphibians in relation to gonadotropin amounts, **Lanza (2)**; Breeding habits of *Hyla faber*, **Lutz**; Reproductive behaviour anomalies shown by gravid and spent ♀ frogs in captivity, **Martof (2)**; Breeding habits of *Hyla versicolor* and *H. avivoca*, **Mecham (2)**; Breeding season differences in anuran reproductive isolation, **Mecham (3)**; Breeding habits and egg laying of *Pipa pipa*, photos., **Rabb**; Sexual cycles in Andean frogs, **Vellard**; Egg-laying habits of *Kassina senegalensis*, **Wager (2).**

Secondary Sex Characters.—Secondary sex characters of the 5 valid species of *Eupsophus* in Chile, **Grandison (1)**; Sex differences in *Desmognathus* and role in courtship, **Organ (2).**

Sex Determination.—Sex determination of *Bufo arenarum* interphase nuclei, **Laguens & Palatnik.**

Sex Differentiation.—Sexual differentiation of heterogenous larvae of *Triturus*, **Furusawa.**

Sex Dimorphism.—Sex dimorphism of vent in *Ambystoma macrodactylum*, **Ferguson (1)**; Larger size of ♀♀ in clasping pairs of *Cyclorana platycephalus*, *C. cultripes* and *Limnodynastes spenceri*, **Lindgren & Main**; Of the blood of *Salamandra s. quadri-virgata*, **Saint-Girons**; Direct demonstration of sexual differences in *Triturus viridescens* skin homografts, **Squadroni & Wolsky.**

Sex Hormones.—Effect of androgenic hormone on gonadial development in *Hynobius nebulosus* larvae, **Amanuma**; Effect of steroid hormones on gonads of *Rhacophorus* larvae, **Iwasawa (1)**; Variation of tryptophan pyrrolase activity during breeding season of female frog, **Spiegel**; Hormone induction of ovulation out of breeding season in Ranidae, **Štefanová & Romanovský**; Effect of testosterone on spermatogenesis of *Rana temporaria*, **van Oordt & Basu**; Facilitation of pituitary-induced frog ovulation by progesterone in autumn, **Wright & Flathers.**

Sex Maturation.—Numbers and sizes of eggs found in *Siren intermedia* from North Carolina, **Collette & Gehlbach**; Egg numbers recorded from *Ambystoma macrodactylum*, **Ferguson (1)**; First record of egg laying in *Siphonops paulensis*, **Gans (3).**

Sex Reversal.—Experimental sex reversal in *Pleurodeles waltlii* by diethylstilboestrol, **Collenot**; Experimental double sex reversal in *Pleurodeles waltlii*, **Gallien**; Induction of gonad masculinization by pituitary grafts in heat-treated hypophysectomized frog larvae, **Yoshikura.**

Viviparity.—Ovo-viviparity in urodeles and anurans, **Lynn.**

DEVELOPMENT

General Works.—Embryological experiments, time-factor dependent, **Johnen.**

Effect of Environment.—Development of *Triturus helveticus* and *Rana temporaria* in high mountain lakes in France, **Angelier**; Effect of environmental salinity on *Rana tigrina* embryonic development, **Gordon, Schmidt-Nielsen & Kelly**; Minimum developmental temperature tolerance of *Scaphiopus couchi* and *Microhyla olivacea*, **Hubbs & Armstrong**; Oviducal environment and oocyte development of *Triturus*, **Humphries (3)**; Low temperature embryogenesis in *Rana platyrrhina*, **Løvtrup**; Negative effects of certain environmental factors on *Ambystoma tigrinum* neoteny and metamorphosis, **TenBroek**; Effect of temperature on rate of development in *Scaphiopus bombifrons*, **Voss.**

Egg : Oogenesis.—Development of *Desmognathus fuscus* in relatively dry conditions, **Brode**; Of *Eleutherodactylus martinicensis*, **Chibon**; Osmotic studies of ovulated amphibian eggs, **De Luque & Hunter, A. S. & F. R.**; Effect of centrifugation on unsegmented *Triturus* eggs, **Dollander & Maillet**; Localization of RNA in *Bufo* and *Triturus* oocytes, **Ficq**; Properties of nucleoli isolated from mature frog ovarian eggs including determination of nucleotide composition of RNA, **Finamore**; Effect of metabolic inhibitors on relations between nucleus and cytoplasm in *Rana* oocytes, **Geuskens**; Morphology, structure, function and histochemistry of amphibian egg involucra, **Ghiara**; Oviposition and eggs of *Necturus*, **Harris, J. P., Jr.**; Rates of desiccation and rehydration of *Plethodon cinereus* eggs, **Heatwole (2)**; Fertilizability of coelomic and oviducal eggs of *Triturus viridescens*, **Hughes, N. (1)**; Effect of oviducal secretions on metaphase II inhibition of *Triturus* ova, **Humphries (1)**; Spontaneous polyploidy in *Triturus* oocytes, **Humphries (2)**; Blockage of meiosis in *Triturus* oocytes, **Humphries (3) & (4)**; Oogenesis of *Hyla labialis* in Colombia, **Hunter & Murcia**; Yolk formation in frog oocytes, **Lanzavecchia**; *In vitro* ovulation studies on *Triturus*, **Lee & Humphries**; Cell division in *Rana temporaria* eggs affected by mercaptoethanol and dithiodiglycol, **Limbosch, Rolin & Brachet**; Effect of loss of blastomere material on development of *Rana* egg, **Milaire**; Eggs of *Ambystoma maculatum* preyed on by caddisfly larvae, **Murphy**; Hatching of *Desmognathus wrighti*, figs., **Organ (1)**; Egg masses of *Pseudotriton porphyriticus*, **Organ (3)**; Oviposition and egg morphology in *Bufo boreas* group, **Savage & Schuierer**; Polysaccharide-rich chromatoid formations in Batracian eggs, **Sentein (1)**; On the formation of mitotic groove at end of mitosis during urodele egg cleavage, **Sentein (2)–(4)**; Embryology of corium of *Rana catesbeiana* tadpole, **Shimozawa**; Cytological studies on early developmental stages of activated *Rana* eggs receiving transplanted blastula nucleus, **Subtelny & Bradt (1)**; Development of activated *Rana pipiens* body cavity eggs into which blastula nuclei have been transplanted, **Subtelny & Bradt (2)**; Gelatinous envelopes and hatching process of *Hyla avivoca* eggs, **Volpe, Wilkens & Dobie**; Eggs of *Rana wageri*, **Wager (3)**; Development, ultrastructure and chemical composition of *Triturus viridescens* oocyte nucleus, **Wischnitzer.**

Embryology.—Potency of *Triturus* lateral plate mesoderm relating to reproductive tissue formation, **Asayama**; Ultrastructure of cells undergoing morphogenetic movements during gastrulation and neurulation in frog embryos, **Balinsky, B. I.**; Differentiation *in vitro* of presumptive epidermis cells of *Rana pipiens* gastrula, **Barth, L. G. & L. J.**; Development of Anura, commencement of larval life, **Cambar**; Embryonic and larval development of *Alytes obstetricans*, **Cambar & Martin**; Direct development study on *Eleutherodactylus*, **Chibon**; Existence of temporal specificity in the reaggregation of gastrula cells of *Xenopus*, **Curtis**; Durations of different periods of development expressed in dimensionless units, **Dettlaf, T. A. & A. A. (1) & (2)**; Cellular movements during pregastrula and gastrula stages of development compared with those of fish embryos, **Devilliers**; Analysis of postgastrula differentiation of *Ambystoma* hypomere, **Finnegan (1)**; Analysis of postgastrula differentiation of *Taricha* hypomere, **Finnegan (2)**; Anatomy and development of racial hybrids, **Fowler**; Developmental stages of *Hyla raddiana*, **Gallardo (4)**; Development, succession and replacement of teeth in *Hyla cinerea*, **Goin & Hester**; Capacity of *Rana pipiens* nuclei to promote development in their own cytoplasm after replicating in *R. esculenta* cytoplasm, **Hennen**; Cell degeneration in larval ventral horn of *Xenopus* spinal cord, **Hughes, A.**; *Ambystoma mexicanum* neural induction, **Johnen**; Respiratory enzyme changes during frog embryogenesis, **Lang & Grant**; Direct development in anurans, and its evolution, **Lynn**; Stages in *Rana esculenta* development, **Manelli & Margaritora**; Development of *Triturus* embryo with central nervous system and ectomesoderm removed, **Mangold**; Electron microscopical study on morphogenetic movement in *Triturus* embryo during early development, **Matsumoto**; Origin of choanae and choanal canal, **Medvedeva (1)**; Development of Australian frogs, **Moore, J. A. (2)**; Morphogenetic functions of nucleus during early development of anurans, **Neifakh**; Respiratory studies on *Bufo bufo* embryo, **Petrucci**; Of *Pipa pipa*, **Rabb**; Morphogenetic potential of the lateral mesoderm in tail bud stages of *Rana*, **Raunich (3)**; Differentiation of explanted cephalic neural folds from *Rana* neurulae, **Raunich (5)**; Development of neural fold material after homoplastic transplantation into the orbit of differentiated tadpoles, **Raunich (6)**; Roles of the nucleus and cytoplasm in development, **Sambuichi**; Blood vessels of developing spinal cord of *Xenopus*, **Sims (1)**; Inhibition of development after endbrain removal in *Xenopus laevis*, **Srebro**; Relationship between mitochondria and yolk platelets in developing cells of *Rana* embryos, **Sung**; Topography of presumptive rudiments in endoderm of *Rana* neurula, **Tahara & Nakamura**; *In vitro* differentiation of isolated endoderm of *Triturus*, **Takata (1)**; Embryology of *Eleutherodactylus augusti latrans*, figs., **Valett & Jameson**; Developmental capacities of gynogenetic diploid *Rana pipiens*, **Volpe & Dasgupta**; Embryonic development of *Hyla avivoca*, **Volpe,**

Wilkens & Dobie; Enzymatic patterns in developing *R. pipiens* embryo, **Wallace**; *Ambystoma* embryonic explants used to study cellular differentiation in organotypic and disaggregated tissue cultures, **Wilde**; Review of limb morphogenesis, **Zwilling.**

Embryology: Chemical.—Retardation of metamorphosis in *Alytes* tadpoles using "Plégicil", **Bounhiol & Disclos** (1); Morphogenetic effects of lipoic acid on embryos, **Brachet**; Biochemistry of eggs treated with β-mercaptoethanol, **Brachet, Cape, Decroly et al.**; Changes in DNA and RNA during development of merogonic combination *Triton palmatus* × *T. cristatus*, **Chen & Zeller**; Effect of penicillin and streptomycin on growth and development of *Rana* tadpoles, **Dąbrowski**; Distribution of protein during *Pleurodeles* development, **Denis**; Effect of ATP addition to culture medium on late gastrulae explants of *Xenopus laevis*, **Deuchar** (1); Amino acid activation of *Xenopus* embryonic tissues, **Deuchar** (2); Effect of extracts of guinea-pig uteri on *Hyla* metamorphosis, **Federici**; Effect of metabolic inhibitors on protein and nucleic acid synthesis in *Rana* oocytes, **Geuskens**; Red cell protein changes during *Rana* metamorphosis, **Herner & Frieden** (2); Serologically active groups in *Triturus* embryos, **Inoue, K.** (1); Precipitin reactions and developmental arrest by antisera in *Triturus pyrrhogaster* and *Hynobius nigrescens* embryos, **Inoue, K.** (2); Effect on fertilization of treating *Rana* eggs with various salts, **Katagiri**; Effect of novocain on *Triturus alpestris* embryo, **Koller**; Respiratory enzyme changes during frog embryogenesis, **Lang & Grant**; Effect of mercaptoethanol and dithiodiglycol on cell division in *Rana temporaria* eggs, **Limbosch-Rolin & Brachet**; Influence of gibberellins on embryonal development, **Liotti** (1); Effects of thyroxine on *Bufo vulgaris* larvae during $CoCl_2$ treatment, **Liotti** (2); Morphological development and chemical differentiation during *Rana* embryogenesis at low temperatures, **Løvtrup**; Influence of Li ion on differentiation of *Triturus pyrrhogaster* presumptive ectoderm, **Masui**; Synthesis of actin in early *Triturus* embryos exposed to X-rays, **Ogawa** (1); Effects of glucuronic acid and related compounds on synthesis of skeletal muscle proteins in *Triturus* embryo, **Ogawa & Karube**; $C^{14}O_2$ incorporation during *Bufo bufo* development, **Petrucci**; Antigens during development of *Bufo bufo*, *B. viridis* and their reciprocal crosses, **Ranzi, Citterio & Samuelli**; Chemical substances present in embryonic *Bufo vulgaris*, **Raunich** (8); Effect of sexual hormones on nucleic acid metabolism in *Pleurodeles* and *Triturus* embryos, **Rickenbacher**; Effect of testosterone on early embryonic stages of *Rana*, **Rodriguez-López** (1); Failure of 2-thio-5-methyl-cytosine to counteract LiCl in *Rana* embryos, **Rogers**; Effect of P^{32} on growth and differentiation of *Rana* tadpole, **Russu, Holan, Rosenberg & Diacu**; Effect of I^{131} on *Bufo vulgaris* larval development, **Shirai, Nonaka & Kanazawa**; Role of enzyme induction in *Rana pipiens* embryonic development, **Spiegel & Frankel**; Inhibition of thymidylate synthetase lethal to blastulae, **Tencer** (1); Incorporation of tritium labelled thymidine in hybrid embryos of *Bufo* ♀ × *Rana temporaria* ♂, **Tencer** (2); Effect of β-mercaptoethanol on water uptake and distribution in *Xenopus laevis* embryo, **Tuft** (1); Enzymatic patterns in developing frog embryo, **Wallace**; Cathoptic activity in *Xenopus laevis* tail during development, **Wróblewski & Grzybek.**

Embryology: Experimental. — Experimental analysis of the morphogenesis of *Ambystoma punctatum* adrenal glands, **Anderton** (2); Morphogenetic effects of lipoic acid on embryos, **Brachet**; Effect of β-mercaptoethanol on egg biochemistry, **Brachet, Cape, Decroly et al.**; Experimental production of gill-lessness in newts and axolotls, **DeLanney & Neal**; Germ-plasm in relation to nuclear transplantation in *Rana*, **Di Berardino** (1); Structure and permeability of the egg cortex of *Triturus alpestris* under various external stimuli, **Dollander & Bonhomme**; Schultze-Pasteels experiments applied to urodele eggs, **Dollander, Cury & Brouant**; Effect of centrifugation on unsegmented *Triturus* eggs, **Dollander & Maillet**; Development of the oral region in *Discoglossus pictus* tadpoles studied by means of LiCl, **Farfaglio**; Experimental studies on the tail bud stage of *Triturus* and *Discoglossus*, **Farinella-Ferruzza**; Development of *Triturus* cerebral tissue explants, **Gallera**; Autoradiographic study of effect of metabolic inhibitors on *Rana* oocytes, **Geuskens**; Nuclear transplantation between 2 subspecies of *Xenopus laevis*, **Gurdon**; Experimental removal of metaphase II inhibition in *Triturus* ova, **Humphries** (1); Experiments on meiotic block in ovum of *Triturus*, **Humphries** (4); Effect of augmented innervation on growth and development of *Ambystoma* limb blastema, **Hutchinson & Rodenhauser**; Precipitin reactions and developmental arrest by antisera in *Triturus pyrrhogaster* and *Hynobius nigrescens* embryos, **Inoue, K.** (2); Inhibition of gonad development in thyroidectomized *Rana temporaria ornativentris* larvae, **Iwasawa** (5); Effects of thyroidectomy, hypophysectomy and thiourea treatment on gonad development in *Rana* larvae, **Iwasawa** (6); Experiments on the time factor and neural induction in *Ambystoma*, **Johnen**; Effect of novocain on *Triturus alpestris* embryo, **Koller**; Effect of different foods on development of *Xenopus laevis* larvae, **Kucias**; Effect of powdered pineal gland on *Rana* tadpole development, **Ławiński**; Treatment of embryos with gibberellins, **Liotti** (1); Effects of thyroxine on *Bufo vulgaris* larvae during $CoCl_2$ treatment, **Liotti** (2); Effects of low temperatures on *Rana* and *Bufo* embryos, **Manelli** (2); Removal of central nervous system tissue and ectomesoderm from *Triturus* embryo and consequent development, **Mangold**; Influence of Li ion on differentiation of *Triturus pyrrhogaster* presumptive ectoderm, **Masui**; Inactivation of embryo nuclei during succeeding stages of development by radiation, **Neifakh**; Pronephric transplantation between $2n$ and n embryos of *Rana pipiens*, **Rafferty, N. S.** (2); Neural crest transplantation from *Rana* and *Bufo* neurulae onto the belly wall, **Raunich** (4); Explanted cephalic neural folds on *Rana* neurulae and their subsequent differentiation, **Raunich** (5); Behaviour of neural fold material after homoplastic transplantation, **Raunich** (6); Effect of sexual hormones on nucleic acid metabolism in *Pleurodeles* and *Triturus* embryos, **Rickenbacher**; Embryonic inductive action of cells cultivated *in vitro* implanted into *Triturus* gastrulae, **Saxén, Toivonen & Vainio**; Role of enzyme induction in *Rana pipiens* development, **Spiegel & Frankel**; Differentiation of *Triturus* isolated endoderm in the presence of the neural fold, **Takata** (2); Development of endodermal tissues from isolated *Triturus* ectoderm under the influence of guinea-pig bone marrow, **Takata & Yamada**; Effect of 5-fluorodeoxyuridine on embryos, **Tencer** (1); Action of neuralizing and mesodermalizing inductors on *Triturus* gastrulae epidermal explants, **Toivonen**;

Epidermis explants from *Triturus* gastrulae used to obtain quantitative evidence for two-gradient hypothesis in primary induction, **Toivonen, Saxén & Vainio**; Effect of morphogenetic inhibitor on water uptake and distribution in *Xenopus laevis* embryo, **Tuft (1)**; Enzymatic pattern determination in developing *R. pipiens* embryo, **Wallace.**

Fertilization.—Fertilization of *Rana* eggs, **Katagiri**; Effect of homologous and heterologous anti-jelly sera on *Rana pipiens* egg fertilization, **Shivers.**

Growth.—Growth rates of *Rana sylvatica* in L. Itasca region of northern Minnesota, **Bellis**; Comparison of developmental rates of a spadefoot toad and frog, **Bragg (2)**; Growth studies on *Bufo hemiophrys* in Minnesota, **Breckenridge & Tester**; Cyclical nature of gastric mucosa cell division in *Ambystoma* larva, **Chiakulas & Scheving**; Morphological and physiological auxetic growth in *Bufo melanostictus*, **Church (1)**; Increased growth of *Rana* tadpoles after implantation of mouse pars distalis, **Enemar**; Quantitative analysis of normal growth of pronephric system in larval Amphibia, **Fox, H. (1)**; *Siren lacertina* increase in length from 350–950 mm. in 4½ years, **Goin (4)**; Chemically conditioned growth retardation in regenerating *Xenopus* tails, **Hahn, Niehus, Scholl & Lehmann**; Biometrical analysis of W. African *Ptychadena* larval development, **Lamotte & Perret (1)**; Stimulation of tadpole growth by feeding them with snails, **Mihail & Asandei**; Effect of population density on growth of anuran tadpoles, **Musialek**; Annual growth zones in living and fossil amphibians, **Peabody**; Production of growth-inhibiting substances by developing *Rana pipiens* tadpoles, **Rose, S. M.**; Growth-controlling exudates of tadpoles in culture medium, **Rose, S. M. & F. C.**; Growth and differentiation of *Rana* tadpole affected by P^{32}, **Russu, Holan, Rosenberg & Diacu**; Size data on *Rhinophrynus dorsalis* tadpoles from Tikal, Guatemala, **Stuart.**

Larval Stages.—Action of thyroxine on winter pause in morphogenesis of toad tadpole, **Bounhiol & Disclos (2)**; Aggregational behaviour of spadefoot tadpoles, **Bragg (2)**; Comparison of the larvae of 5 northeastern U.S.A. species of *Ambystoma*, **Brandon (2)**; Cyclical nature of cell division in pond and laboratory reared *Ambystoma* larvae, **Chiakulas & Scheving**; Growth and development of frog tadpoles affected by penicillin and streptomycin, **Dąbrowski**; Experimental production of gill-lessness in newts and axolotls, **DeLanney & Neal**; Response of *Rana* tadpoles to bovine growth hormone preparation, **Enemar**; Larval development of *Ambystoma macrodactylum*, **Ferguson (1)**; Larval form and development of *Hyla raddiana*, **Gallardo (4)**; Form and function of fore-gut in anuran larvae with reference to the *manicotto glandulare*, **Griffiths**; Tadpoles of *Hymenochirus boulengeri*, **Haas**; Cell degeneration in ventral horn of *Xenopus* larval spinal cord, **Hughes, A.**; Effect of food on speed of development of *Xenopus laevis* larvae, **Kucias**; Development and metamorphosis of *Ptychadena submascareniensis, tournieri* and *trinodis*, **Lamotte, Dzieduszycka & Lauwarier**; Larval forms of West African *Ptychadena maccarthyensis, P. perreti* and *P. mascareniensis*, **Lamotte & Perret (1)**; Larval forms and development of W. African *Leptopelis* spp., **Lamotte & Perret (2)**; Effect of powdered pineal gland on *Rana* tadpole development, **Ławiński**; Larval stages of *Rana esculenta*, figs., **Manelli & Margaritora**; Development of *Triturus* larva with central nervous system and ectomesoderm removed, **Mangold**; Effect of population density on development of anuran tadpoles, **Musialek**; Hatchlings of *Pseudotriton porphyriticus*, **Organ (3)**; *Anotheca coronata* tadpole identified, **Robinson**; Growth-controlling exudates of tadpoles in culture medium, **Rose, S. M. & F. C.**; Salamander larval life, **Sijbers**; Aquarium larvae fed on snails, effect on growth and metamorphosis, **Stolk (11)**; Behaviour, feeding habits and growth of *Rhinophrynus dorsalis* tadpoles, **Stuart**; Tadpole biology, **Van Dijk**; Larval form, mouthparts and development of *Hyla avivoca*, **Volpe, Wilkens & Dobie**; Rate of larval development in *Scaphiopus bombifrons*, **Voss**; Tadpoles of *Kassina senegalensis*, **Wager (2)**; Electron microscopical observations on *Xenopus* larval tissues, **Weber**; *Hyla arenicolor* and *H. wrightorum* larval development, mouthparts, body proportions, pigmentation and ecology, **Zweifel.**

Metamorphosis.—Metamorphosis of *Ambystoma rosaceum* throughout its geographic range, **Anderson, J. D. (2)**; Of *Rana temporaria* and *Triturus helveticus* in high mountain lakes in S. France, **Angelier**; Metamorphosis of *Pseudotriton palleucus* with iodine, **Blair, A. P.**; Neurosecretion during metamorphosis of anurans, **Boitkevich**; Retardation of *Alytes obstetricans* metamorphosis, **Bounhiol & Disclos (1)**; Delay in *Rana* metamorphosis caused by penicillin and streptomycin, **Dąbrowski**; Development of melanophores during *Taricha torosa* metamorphosis, **Duncan**; Metamorphosis of *Hyla* tadpoles stimulated by the miometrium of guinea-pig uteri, **Federici**; Nucleic acids and induced amphibian metamorphosis, **Finamore & Frieden**; Biochemical changes during anuran metamorphosis, **Frieden**; Second metamorphosis in *Diemictylus viridescens*, **Grant, W. C., Jr.**; Changes in serum proteins during spontaneous and induced metamorphosis, **Herner & Frieden (1)**; Biochemical changes during anuran metamorphosis, **Herner & Frieden (2)**; Action of reserpine on metamorphosis of *Rana temporaria* tadpoles, **Kehl, Dumont, Czyba & Germain**; Replacement of larval basement lamella by adult-type basement membrane in anuran skin, **Kemp (2)**; Role of hormones in metamorphosis, **Kollross**; Appearance of legs in West African *Ptychadena* and phalangeal formulae, **Lamotte, Dzieduszycka & Lauwarier**; Development and metamorphosis of W. African *Ptychadena*, **Lamotte & Perret (1)**; Development and metamorphosis of W. African *Leptopelis*, **Lamotte & Perret (2)**; Metamorphosis observations of *Rana curtipes*, **Lobo**; Types of amphibian metamorphosis, **Lynn**; Metamorphosis of *Rana esculenta*, figs., **Manelli & Margaritora**; Action of serotonin (5-hydroxytryptamine) on amphibian metamorphosis, **Niaussat, P. & Mme.**; Retardation of *Bufo vulgaris* metamorphosis through injection of tadpoles with I^{131}, **Shirai, Nonaka & Kanazawa**; Negative effects of certain environmental factors on *Ambystoma tigrinum* metamorphosis, **TenBroek**; Electrical changes in *Ambystoma* heart on metamorphosis, **Tricoche, Laplaud et al.**; Development of the *Mm. petrohyoidei* during anuran metamorphosis, **Unayama**; Effect of diencephalon neurosecretion on metamorphosis, **Voitkevich (1)**; Rate of metamorphosis in *Scaphiopus bombifrons*, **Voss**; Catheptic activity in *Xenopus laevis* tail during metamorphosis, **Wróblewski & Grzybek.**

Neoteny.—Neotenous urodeles, **Lynn**; New localities for neotenous *Triturus alpestris* in Yugoslavia, **Radovanović**; Interpretation, causes and phylogenetic significance, **Ryke & Eeden**; Negative effects of certain environmental factors on *Ambystoma tigrinum* neoteny, **TenBroek.**

Ontogeny.—Ontogenetic changes in *Ambystoma rosaceum* colour pattern, **Anderson, J. D.** (2); Ontogenetic study of the genetic differences regarding sex determination in *Triturus*, **Furusawa**; Ontogeny and dependence of brain development on certain states of differentiation, **Matveyev**; Origin of amphibian ontogeny, **Szarski.**

Organizers.—Role of entoblast in *Triturus* heart formation, **Amano**; Induction of the nervous system in embryonic *Triturus*, **Correia & Gallera**; Induction of metamorphosis in *Alytes* tadpole isolated intestine, **Delsol**; Inhibitory control of neural differentiation in *Rana* embryos, **Dial**; Influence of tissue mass and endoderm in *Ambystoma* differentiation, **Finnegan** (1); Influence of tissue mass and endoderm in *Taricha* differentiation, **Finnegan** (2); Factors regulating the formation of the gonad and Bidder's organ in embryonic and larval *Bufo bufo*, **Ghirardelli** (3); Factors determining migration of cells from *Bufo bufo* primary ureter, **Gipouloux & Cambar**; Factors influencing the positioning of newt placodal derivatives, **Jacobson, A. G.** (1); Importance of the time factor in *Ambystoma* neural induction, **Johnen**; Spinal cord induction during tail regeneration in *Triturus* and *Salamandra*, **Kiortsis & Droin**; Transfer of materials from labelled heterogeneous archencephalic inductors implanted in urodele embryos, **Kuusi**; Lens induction in eye morphogenesis, **Lopashov & Stroeva**; Induction of limb regeneration in post-metamorphic frogs by xenoplastic adrenal transplants, **Misell, M.**; Transfilter neural induction of newt ectoderm, **Saxén**; *Triturus vulgaris* gastrulae used to test the combined effect of two types of inductors mixed in different ratios, **Saxén & Toivonen**; Inductive action of HeLa and CAL cells and human amniotic cell explants implanted into *Triturus* gastrulae, **Saxén, Toivonen & Vainio**; Neuralizing and mesodermalizing inductive actions of bone marrow tissue and HeLa-cells on *Triturus* gastrulae epidermis, **Toivonen**; Quantitative evidence for two-gradient hypothesis in primary induction using HeLa-cells and *Triturus* gastrulae, **Toivonen, Saxén & Vainio**; Technique for testing macromolecular samples in solution for morphogenetic effects on isolated ectoderm of amphibian embryo, **Yamada & Takata.**

Organogeny.—Morphogenesis of the digestive system of *Rana dalmatina*, **Albert & Cambar**; Morphogenesis of *Ambystoma punctatum* adrenal glands, **Anderton** (2); Potency of *Triturus* lateral plate mesoderm relating to reproductive tissue formation, **Asayama**; Mitotic activity in *Triturus* developing spinal medulla, **Baffoni** (1); Mitotic activity during mielencephalon development in *Triturus*, **Baffoni** (2); Mitotic activity during *Triturus cristatus* prosencephalon development, **Baffoni** (3) & (4); Development of *Bufo viridis* parathyroids, **Boschwitz**; Skin gland development in *Rana pipiens* larva during treatment with thyroxine, **Bovbjerg & Kollross**; Development of adrenal bodies in *Pleurodeles waltlii*, **Certain**; Origin of formative material for ♀ genital region in *Rana dalmatina*, **Dechambe**; Different reactions of parts of the pronephros in *Rana dalmatina* to thyroid hormone, **Dechambe & Cambar**; Development of photoreceptors in *Hyla regilla* stirnorgan, **Eakin & Westfall** (2); Reasons for stoppage of heart development in *Triturus* embryo after extirpation of entoblast, **Fautrez & Amano** (2); Pronephric systems of larval amphibians quantitatively analysed, **Fox, H.** (1); Differentiation of transplanted pancreatic rudiments of *Ambystoma*, **Frye**; Structure and development of anuran fore-gut with reference to the *manicotto glandulare*, **Griffiths**; Differentiating muscle in developing myotomes of *Ambystoma* larvae, **Hay**; Histogenesis of intestinal epithelium of *Bufo vulgaris* larva with reference to tissue iron, **Hoshino**; Notochord formation in explant from dorsal marginal zone of *Hynobius* gastrula, **Ikushima**; Effects of thyroid and hypophysis removal and thiourea treatment on gonad development in frog larvae, **Iwasawa** (6); Factors influencing positioning of newt placodal derivatives, **Jacobson, A. G.** (1); Heart determination in *Triturus*, **Jacobson, A. G.** (2); Morphogenesis of cardiac jelly and its role in development of *Rana pipiens* heart, **Jaffee**; Development of the parasphenoid in Caudata, **Lebedkina**; Morphogenesis of the vertebrate eye, **Lopashov & Stroeva**; Low temperature embryogenesis of *Rana*, **Løvtrup**; Rate of development of sense organs correlated with brain development, **Matveyev**; Origin of choanae and choanal canal, **Medvedeva** (1); Embryonic development of lateral lines in the head of *Ranodon* and *Hynobius*, **Medvedeva** (2); Development of peripheral nerves in *Xenopus laevis*, electron microscopic study, **Peters, A.**; Influence of testosterone propionate on *Pleurodema nebulosa* gonad development, **Pisanó & Pizarro**; Development of cells in differentiating urodele pituitaries, **Rhodes & Dalton**; Development of the nervous system in embryonic *Bufo bufo*, **Rossi** (2); Blood vessels of developing spinal cord of *Xenopus*, **Sims** (1); Embryonic development of sensory lines and dermal bones, of the cheek, **Stensiö**; Development of presumptive rudiments in endoderm of *Rana* neurula, **Tahara & Nakamura**; Development of Bidder's organ in embryonic *Bufo bufo*, **Vannini & Ghirardelli**; Development of the median eminence of the neurohypophysis, **Voitkevich** (2); Development of *Heleophryne purcelli* chondrocranium, **Westhuizen**; Review of limb morphogenesis, **Zwilling.**

Sperm: Spermatogenesis.—*Ambystoma macrodactylum croceum* spermatophore structure, **Anderson, J. D.** (1); *Amphiuma tridactylum* spermatozoa—morphology, helical motility and reversibility, **Baker, C. L.** (1) & (2); Spermatogenesis in hypophysectomized toads after administration of pituitary extract, **Basu & Mondal** (1); Spermatogenesis in *Rana tigrina*, **Basu & Mondal** (2); Spermatophore of *Proteus anguinus* **Briegleb**; *Triturus viridescens* spermatozoa, **Fawcett & Hilfer**; Electron microscope study of *Triturus cristatus* spermatozoa, **Furieri**; Electron microscopy of spermatid and spermatozoon, **Gatenby**; Spermatophores of *Necturus*, **Harris, J. P., Jr.**; Spermatogenetic cycles and sperm emission in European amphibians, **Lanza** (2); Spermatophore of *Desmognathus wrighti*, figs., **Organ** (1); Effect of pH on motility of *Rana* spermatozoa, **Rodriguez-López** (2); Survival and fecundity of anuran spermatozoa in *in vitro* testes at low temperature, **Rostand**; Spermiogenesis of *Rana* as an example of cell differentiation, **Serra & Vicente.**

Technique.—Culture of axolotl ovaries in different media, **Foote, C. L. & F. M.**; Analysis of sero-

logically active groups in *Triturus* embryos, **Inoue, K. (1)**; Use of serological techniques in *in vivo* and *in vitro* tests to demonstrate stage-specific components in early embryological development, **Inoue, K. (2)**; Use of urodeles in tracer experiments with heterogeneous archencephalic inductors, **Kuusi**; Membrane filter used to study neural induction of newt ectoderm, **Saxén**; Spectrophotometric and fluorometric estimations of enzymes in homogenates of *Rana pipiens* embryo, **Wallace**; Method for testing macromolecular samples in solution for morphogenetic effects on isolated ectoderm of amphibian embryo, **Yamada & Takata.**

Teratology.—Appearance of extra limbs in *Triturus* larvae after partial exogastrulation, **Fautrez & Amano (1)**; Subsequent development of parabiotic twins derived from *Triturus* embryos, **Furusawa.**

EVOLUTION AND GENETICS

General Works: Theories.—Significance of increased amounts of ionizing radiations in the environment for the continued existence and future evolution of natural populations, **Blair, W. F. (1)**; Theory of origin of spadefoot toads deduced mainly by study of their habits, **Bragg (1)**; Evolution of frogs; general hypotheses, **Hecht**; Evolution of mimicry by *Desmognathus carolinensis*, **Huheey & Brandon**; Comments on age and origin of *Crinia* spp. in Australia, **Littlejohn (3)**; †Seasonal drought and the evolution of Devonian vertebrates, **Romer, A. S.**; Origin of *Bufo terrestris* with reference to skeletal characters and present distribution, **Sanders**; Evolutionary changes of vertebrates in the transition to terrestrial life, **Schmalhausen**; Possible relation of pineal complex and subcommissural organ to vertebrate emergence on land, **Steyn**; Origin of Amphibia, **Szarski**; Amphibian evolution and phylogeny, **Terent'ev (2)**; Evolution: fish to land animals, **Westoll**; Theories of tetrapod vertebral morphology, **Williams, E. E.**

Albinism.—Albinism in *Rana temporaria*, col. photos., **Husson & Chaudonneret.**

Chromosome Problems.—Somatic karyotype of *Pleurodeles waltlii*, **Beetschen & Jaylet**; *Rana pipiens* karyotype and investigation of its stability during embryonic differentiation, **DiBerardino (2)**; Patterns of synthesis in *Triturus cristatus* lampbrush chromosome loops, **Gall & Callan**; Chromosome analyses of back-transfer embryos of *Rana pipiens*, **Hennen**; Cellular basis of hybrid inviability between *Rana sylvatica* and *R. pipiens*, **Moore, J. A. (1)**; Chromosome numbers of South American anurans, **Saez-N. Brum**; Role of chromosomal translocations in urodele evolution and speciation, **White**; Ultrastructure, chemical composition and physiology of lampbrush chromosomes in *Triturus viridescens* oocyte nucleus, **Wischnitzer.**

Evolution.—Evolutionary process in Chilean Anura, **Cei (4)**; Evolution of the hyoid arch in vertebrates, **Guth (1)**; Development of the parasphenoid in Caudata, **Lebedkina**; Evolution of amphibian jaw mechanisms, **Olson**; Evolutionary trends in the genus *Desmognathus*, **Organ (2)**; Morphological changes of vertebrates in the transition to terrestrial life, **Schmalhausen**; Evolutionary studies on sensory lines and dermal bones of the cheek in fish and amphibians, **Stensiö**; Appearance of adaptations to land environment, **Szarski**; Role of chromosomal translocations in urodele evolution and speciation, **White**; Origin and evolution of tetrapod vertebrae, **Williams, E. E.**

Evolution of Organs.—Evolution of the inner ear, **Guth (2)**; Role of endocrine organs in the occurrence of neoteny in chordates, **Ryke & Eeden**; Role of pineal complex and subcommissural organ in vertebrate emergence on land, **Steyn.**

Genetics.—Genetic effects of X-irradiation of natural populations, **Blair, W. F. (1)**; Inter- and intragroup genetic compatibility in *Bufo*, **Blair, W. F. (3)**; Transplantation of genetically marked nuclei in the axolotl, **Briggs, Signoret & Humphrey**; Genetic constitution of isolated populations of *Lepidobatrachus asper*, **Cei (3)**; Changes in DNA and RNA during development of merogone, *Triton palmatus* × *T. cristatus*, **Chen & Zeller**; Possible genetic implications of homograft reactions in axolotls, **DeLanney, Johnson & Woodham**; Histocompatibility genetics of isolated bullfrog populations from California, **Hildemann & Haas**; Chromosomal deletion in *Siredon mexicanum* involving nucleolar organizer and gene for dark colour, **Humphrey**; Genetic differences possibly reflected in the various chromatographic patterns of parotid gland secretions in normal and hybrid *Bufo*, **Hunsacker, Alston et al.**; Nucleo-cytoplasmic hybrids between *Rana pipiens* (Kandiyohi dominant mutant) and wild-type, **McKinnell**; Inheritance of polymorphic characters in *Crinia insignifera* populations, **Main**; Interspecific gene exchange between *Hyla* spp., **Mecham (1)**; Review of interrelations between gametes of *Rana pipiens* and *R. sylvatica* and role in genetic isolation, **Moore, J. A. (1)**; Inheritance of vertebral stripe colour in *Acris crepitans*, **Pyburn (1) & (2)**; Antigen studies of *Bufo bufo*, *B. viridis* and their reciprocal crosses, **Ranzi, Citterio & Samuelli**; Mitotic figure distribution in central nervous system of normal and colchicine-treated *Rana* embryos, **Shell**; Genetic analysis of *Taricha* species-characteristics in second-generation hybrids, **Twitty (2)**; Genetic analysis of pattern variants of *Rana pipiens*, **Volpe (1)**; Variable expressivity of non-spotted (burnsi) mutant gene in *Rana pipiens*, **Volpe (3)**; Analysis of pigmentary patterns of gynogenetic diploid *Rana pipiens*, **Volpe & Dasgupta.**

Genetics of Sex.—♂/♀ proportion in gynogenetic diploid *Rana pipiens*, **Volpe & Dasgupta.**

Phylogeny.—Phylogenetic relationships among Urodela, primitive Anura and Neobatrachia, **Casamiquela (2)**; Phylogenetic relationships of genera in the Arthroleptinae, Phrynobatrachinae and Cacosterninae, **Laurent (1)**; Discussion of the phylogenetic significance of neoteny, **Ryke & Eeden**; Concerning monophyletism and polyphyletism in relation to the origin of land vertebrates, **Schmalhausen**; Homologies of sensory lines and dermal bones of the cheek in fishes and amphibians, **Stensiö**; Monophyletism or polyphyletism of land vertebrates, **Szarski**; Amphibian evolution and phylogeny, **Terent'ev (2)**; Phylogeny of tetrapod vertebral types, **Williams, E. E.**

Polymorphism.—Electroferogram analyses of seroproteins in Argentine varieties of *Bufo arenarum*, **Bertini & Cei**; Inheritance of polymorphic characters and changes in morph frequency in *Crinia insignifera* populations on Australian island, **Main**; Polymorphism in anuran populations, **Volpe (2)**.

Variation.—Variations in *Bufo valliceps* populations in Guatemala, **Baylor & Stuart**; Morphological variation of Argentine populations of *Lepidobatrachus asper*, **Cei (3)**; Geographical variation of *Bufo spinulosus* in Chile, **Cei (5)**; Geographic variation of *Ambystoma macrodactylum*, **Ferguson (1)**; Geographic variations of *Bombina bombina* and *B. variegata* in Czechoslovakia, **Lác (1)**; Body size variations in Czechoslovakian amphibians in Orava River basin, **Lác (2)**; Variations in weights and measurements between Minnesota and Wyoming *Ambystoma tigrina*, **Latimer, Roofe & Feng**; Morphological variation between local *Taricha granulosa* populations in Oregon, **Livezey & Wyllie**; Colour variations in *Acris crepitans* populations, **Pyburn (1)**; Variation trends in Illinois amphibians, **Smith, P. W.**; Analysis of the variability of external characters in *Bombina* from Roumania, **Stugren & Popovici (2)**; Colour variant (erythristic phase) of *Plethodon cinereus* associated with glacial boundaries, **Thurow**; External variation in South Dakota *Bufo woodhousei*, **Underhill**; Genetic analysis of pigment pattern variations of *Rana pipiens*, **Volpe (1)**; Geographic variation in *Hyla arenicolor* tadpoles, **Zweifel.**

ECOLOGY AND HABITS

General Works.—Cave dwellers from Tennessee, **Barr**; Herpetofauna of the dipterocarp, submontane and mountain zones of Cuernos de Negros, Philippines, **Brown & Alcala**; List of amphibians in North Carolina, **DePoe, Funderburg & Quay**; Cavernicole fauna of Tuscany, Italy, **Lanza (3)**; Annotated list of Amphibia collected in Hyde and Tyrrell counties, North Carolina, **Palmer & Whitehead.**

Amphibia.—Amphibia in Portugal, distribution and ecology, **Almaça**; Surinam amphibians, **Audretsch (1)**; Study of amphibians in the Grande-Brière region, **Bodin**; Habitats of Florida amphibians, **Carr & Goin**; Amphibia in the Kagera and Albert National Parks, Africa, **Curry-Lindahl (2)**; Characteristic habitats occupied by amphibians in biotopes modified by man, **Heusser**; Amphibia from the Howard College Natural Area, Alabama, **Holman (1)**; Amphibia of Provence, general ecology, **Knoepffler (1)**; Amphibia in the Orava River basin, Czechoslovakia, **Lác (2)**; Amphibia of Corfu, **Mertens (3)**; Amphibia in Allegany Indian Reservation, Cattaraugas Co., U.S.A., **Stewart**; Amphibia in Guadalquivir swamps, Spain, **Valverde.**

Anura.—Surinam frogs, **Audretsch (2)**; *Arthroleptis xenodactyloides* from Chirinda forest, S. Rhodesia, **Bruggen**; Ecological and geographical barriers to the dispersal of *Bufo spinulosus* in Chile, **Cei (5)**; *Bombina variegata* in Limburg, Holland, **Fonteyne (2)**; *Hyla raddiana* in the province of Buenos Aires, **Gallardo (4)**; Habitat selection by *Rana sylvatica*, **Heatwole (1)**; Orophile *Nectophrynoides occidentalis* on Mt. Nimba, W. Africa, **Lamotte & Roy (2)**; General ecology of *Trichobatrachus robustus*, *Bufo funereus*, *Geotrypetes* and *Herpele*, **Laurent (2)**; Natural history notes on some Australian frogs, **Lindgren & Main**; Reproductive isolating mechanisms in Anura, **Mecham (3)**; *Rana arvalis* and *Alytes obstetricans* in Hautes Fagnes, Belgium, **Meeuwen**; Habitats of *Bombina bombina* and *B. variegata* in Krakow-Chrzanów and R. Wisła regions, Poland, **Michalowski (1)**; Frogs of eastern New South Wales, **Moore, J. A. (2)**; Habitats of frogs recorded from the British Honduras, **Neill & Allen**; Geographic variations in *Acris crepitans* stripe colour frequencies, **Pyburn (1)**; From Illinois, figs., distribution and ecology, **Smith, P. W.**; Natural history of *Rana arvalis* in Siebenbürgen, Roumania, **Stugren & Kohl**; Habitats of young *Rana pipiens* and *R. clamitans* mousetrapped near Ithaca, New York, relationship to ground cover and distance to water, **Whitaker.**

Caudata.—Salamanders and newts of Quebec province, **Alexandre**; Habitats of larval and adult *Ambystoma rosaceum*, **Anderson, J. D. (2)**; *Ambystoma maculatum* and *E. laterale*, **Baarslag**; Salamander collecting in Costa Rica, **Brame, A. (2)**; Of *Plethodon cinereus* in New Brunswick, **Cook & Bleakney**; Habitat distribution of *Ambystoma macrodactylum* in western N. America, **Ferguson (1)**; Habitat of *Salamandra salamandra* in Limburg, Holland, **Fonteyne (1)**; General notes on Plethodontoides, **Freytag (3)**; Of *Paramesotriton* and *Pachytriton*, **Freytag & Petzold**; *Triturus cristatus* subspecies in Roumania, **Fuhn & Freytag**; Ecological, biological and zoogeographical study of *Euproctus* in Corsica, **Goux (1) & (2)**; Probable aposematic and pseudaposematic functions of colour patterns in three Appalachian salamanders, **Huheey**; Cavernicole *Hydromantes i. italicus* from Italy, **Lanza & Marcucci**; From Illinois, figs., distribution and ecology, **Smith, P. W.**

Aquaria, Terraria, etc.—Vivarium requirements of *Ambystoma maculatum* and *A. laterale*, **Baarslag**; Keeping *Bufo americanus* and *Hyperolius horstocki*, **Bustard**; Keeping amphibians as pets, **Cochran (2)**; Keeping *Bombina variegata*, **Fonteyne (2)**; Terrarium care for *Plethodon* spp., **Freytag (3)**; Rearing of axolotls, **Gee**; Keeping *Diemictylus viridescens*, **Guppy**; Aquarium requirements of *Hymenochirus boulengeri*, **Haas**; Breeding of *Bufo melanostictus* in captivity, **James**; Vivarium life, study of the care and breeding of amphibians, their ecology and habits, **Leutscher**; Keeping Pipidae, **Phillips**; Keeping *Hynobius* spp. and *Ranodon sibericus*, **Reijst**; Rearing *Megalobatrachus japonicus davidianus*, **Šafránek**; Snail feeding in aquarium, its effect on growth and metamorphosis of amphibian larvae, **Stolk (11)**; Behaviour of frogs in terraria, **Stürckow**; Amphibia in captivity, a general note, **Twiselton**; Rearing of *Neurergus crocatus*, **Villwock**; Breeding of *Hymenochirus boulengeri* in captivity, **Yuhas.**

Behaviour.—Role of the pineal system in amphibian behaviour, **Adkins & Zweifel**; Importance of habits in evolutionary studies of spadefoot toads, **Bragg (1)**; Aggregational behaviour of spadefoot tadpoles, **Bragg, (2)**; Summer surface activity in California salamanders, **Brame, A. (1)**; Differential behaviour of *Xenopus laevis*, **Haubrich (1)**; Hierarchical behaviour in *Xenopus laevis*, **Haubrich (2)**; Activity and behaviour of *Rana sylvatica*, **Heatwole (1)**; Habits of amphibians in captivity and in natural biotopes modified by man, **Heusser**; Change in daily activity of *Rana ridibunda* in relation to temperature, **Pashkova & Sudarev**; Habits of *Megalobatrachus japonicus davidianus* in aquarium, **Šafránek**;

Gregarious behaviour of *Rhinophrynus dorsalis* tadpoles, **Stuart**; Activities of frogs in terrarium, **Stirekow**; Habits of *Hyperolius h. horstockii*, **Visser**; *Rana clamitans* and *R. pipiens* apparently more active in rainy weather on basis of number caught in mousetraps, **Whitaker.**

Breeding and Parental Habits.—Mating behaviour of *Euproctus asper* in captivity, **Ahrenfeldt**; Breeding site and habits of a spadefoot, toad and frog breeding congress, **Bragg (2)**; Observations on ♀ *Desmognathus fuscus* with eggs in a relatively dry habitat, **Brode**; Mating habits of *Hymenochirus boulengeri*, **Haas**; *Necturus* breeding habits, **Harris, J. P., Jr.**; Part played by environmental factors in amphibian reproductive activity, **Heusser**; Mating season of *Rana temporaria* in Poland, **Juszczyk**; Calls of breeding congresses of some Jigalong (Australia) species; description of sites, **Lindgren & Main**; *Hyla faber* breeding habits, **Lutz**; Parental care in anurans, **Lynn**; Role of breeding site in anuran reproductive isolation, **Mecham (3)**; Breeding habits of New South Wales frogs, **Moore, J. A. (2)**; Egg mass and attending ♀ *Desmognathus wrighti*, **Organ (1)**; Breeding behaviour and brood care of *Pipa pipa*, **Rabb**; Breeding habits of *Hyla crucifer* and *H. c. bartramiana*, **Roth**; Breeding behaviour of *Rana temporaria*, **Savage, R. M.**; *Bufo exsul* and *B. nelsoni* breeding habits, **Savage & Schuierer**; Egg laying habits of *Cophixalus* and *Asterophrys wilhelmana* in New Guinea, **Tyler (2)**; Breeding sites of some Anura, **Van Dijk**; *Hymenochirus boulengeri* breeding habits, **Yuhas.**

Burrowing Habits.—Burrowing habits of desert amphibians, **Chew.**

Cannibalism.—Records of cannibalism in *Plethodon cinereus*, **Heatwole & Test**; Absence of cannibalism in *Rhinophrynus dorsalis* tadpoles from Tikal, Guatemala, **Stuart.**

Courtship.—Courtship behaviour of *Ambystoma macrodactylum croceum*, **Anderson, J. D. (1)**; Courting behaviour of *Triturus*, **Gauss**; Courtship behaviour of *Desmognathus wrighti*, **Organ (1)**; Courtship behaviour and season in *Desmognathus*, **Organ (2)**; Local variation of mating behaviour in *Triturus pyrrhogaster*, **Sawada.**

Diseases.—Amphibian diseases with notes on their therapeutics, **Reichenbach-Klinke.**

Distribution.—Ranges of allopatric and sympatric populations of *Leptodactylus ocellatus* and *L. chaquensis* in Argentina, **Cei & Bertini (2)**; Decreasing frequency of *Bombina bombina* in Sweden, **Curry-Lindahl (1)**; South American distribution of Argentine Brachycephalidae, **Gallardo (7)**; Local distribution and habitat selection by *Rana sylvatica*, **Heatwole (1)**; Correlation between critical thermal maxima, habitat and range of salamanders, **Hutchison**; *Bombina bombina* and *B. variegata* in Czechoslovakia, **Lác (1)**; Altitude limits of amphibians in Orava River basin, Czechoslovakia, **Lác (2)**; Distributional ranges and locality records in Canada and Alaska, **Logier & Toner**; Geographic distribution of *Rana tigrina*, **Manaças**; Distributional ranges of *Bombina* in Krakow-Chrzanów and R. Wisła regions, Poland, **Michalowski (1)**; Patterns of distribution of Australian frogs, **Moore, J. A. (2)**; New Central American records for *Rhinophrynus dorsalis*, **Nelson & Hoyt**; Local distribution of *Desmognathus* in Virginia, **Organ (2)**; Distribution patterns in southern Africa, **Poynton (1)**; Illinois amphibians, a critical review of species and their distribution, **Smith, P. W.**; Home range and population notes for *Plethodon cinereus*, **Taub**; Colour variant of *Plethodon cinereus* associated with glacial boundaries, **Thurow.**

Ecological Associations.—Association of *Rana tigrina* with buffalo in Portuguese India, **Manaças**; Of *Desmognathus* in Virginia, **Organ (2)**; Amphibia of swamps and marshes in S.W. Spain, **Valverde.**

Economics.—Method of eating frogs in New Guinea, **Tyler (2).**

Effects of Environment.—Relation of temperature and rainfall to calling and spawning activity in a mixed anuran population, **Blair, W. F. (2)**; Effect of the volcano Parícutin on vertebrates, **Burt**; Effect of pond and laboratory rearing on cell division in *Ambystoma* larvae, **Chiakulas & Scheving**; Seasonal and lunar variation in numbers of mating toads in Bandung, Java, **Church (2)**; Autumnal pause in morphogenesis of *Alytes* tadpoles, **Disclos & Bounhiol**; Disappearance of *Salamandra salamandra* from Limburg, Holland, **Fonteyne (1)**; Disappearance of *Bombina variegata* from Limburg, Holland, **Fonteyne (2)**; Importance of environment in behaviour, **Heusser**; Seasonal and altitudinal variation in diet in Congolese amphibians, **Inger & Marx**; Influence of temperature on life and activity of *Rana temporaria*, **Juszczyk**; Water levels as an environmental factor in *Bufo boreas* breeding season, **Metter**; Effects of temperature on *Rana ridibunda* under natural conditions, **Pashkova & Sudarev**; Growth inhibitory substances produced by crowded *Rana pipiens* tadpoles, **Rose, S. M. & F. C.**; Influence of external factors on spawning date of the common frog, **Savage, R. M.**; Predictable reactions of a *Plethodon* population toward environmental conditions, **Taub**; Seasonal variation in feeding habits of *Rana ridibunda* in Roumania, **Vancea, Mindou & Simionescu.**

Enemies and Defence.—Predation by caddisfly larvae on *Ambystoma maculatum* eggs, **Murphy**; Parasites and predators of juvenile *Rana temporaria*, **Savage, R. M.**; *Cophixalus parkeri* eaten by *Halcyon sancta*, **Tyler (1).**

Feeding Habits.—Stomach contents of *Siren intermedia* from North Carolina, **Collette & Gehlbach**; *Plethodon jordani* found eaten by *Desmognathus quadramaculatus*, **Huheey & Brandon**; Dominant foods, seasonal and altitudinal variation in diet, and species—prey size relations in Congolese Amphibia, **Inger & Marx**; Arthropods and nematodes in *Herpele squalostoma* stomach. Vegetable matter in *Geotrypetes* stomach, **Laurent (2)**; Stomach contents of *Rana tigrina* from Portuguese India, **Manaças**; Effect of diet on tadpole growth; experiments using snails, **Mihail & Asandei**; Feeding habits of adult *Taricha granulosa* and *T. rivularis*, **Packer**; Stomach analyses of *Rana ridibunda* in Roumania, **Vancea, Mindou & Simionescu**; Stomach contents of mousetrapped *Rana pipiens* and *R. clamitans* from Ithaca, N.Y., **Whitaker.**

Hibernation.—Hibernation of *Bufo hemiophrys*, **Breckenridge & Tester**; Hibernal lethargy caused by internal reactions, independent of temperature, **Heusser**; Hibernation of *Rana temporaria* in Poland, **Juszczyk**; Hibernation survival studies on *Plethodon cinereus*, **Taub.**

Homing.—Homing experiments on *Aneides* experimentally removed from habitat, **Gordon, R. E. (2)**; Homing migrations of *Rana esculenta* recorded in Germany, **Sanden-Guja**; Homing behaviour in *Taricha rivularis*, **Twitty (1).**

Larval Stages.—Ecology of *Rana temporaria* tadpoles and their anatomy and physiology, **Savage, R. M.**

Life History.—Life history of *Ambystoma rosaceum*, **Anderson, J. D. (2)**; Of *Rana temporaria* and *Triturus helveticus* in high mountain lakes in S. France, **Angelier**; Seasonal and lunar changes in reproductive cycle of *Bufo melanostictus* from Bandung (Java), **Church (2)**; Of *Necturus*, **Harris, J. P., Jr.**; Types of life history in Amphibia, **Lynn**; Breeding season of *Bufo boreas* affected by water levels, **Metter**; Life history of *Desmognathus* in Virginia, **Organ (2).**

Locomotion.—Stances and walking movements of New Zealand frogs, **Barwick**; Bipedalism in frogs, **Dubrul**; Biomechanics of *Rana catesbeiana* jumping at prey, **Gans (4)**; Locomotive activity of sympatric salamanders in the Appalachians, **Gordon, R. E. (1)**; Importance of pelvic girdle in locomotion, **Whiting.**

Moults.—Hormonal control of moulting in toads, **Jørgensen & Larsen.**

Movement and Migration.—Local movements of *Bufo hemiophrys* in Minnesota, studied by marking with Ta^{182}, **Breckenridge & Tester**; Migrations of *Taricha granulosus*, **Carl**; Toad migrations in Camberley, **Davison**; Seasonal migrations of *Rana temporaria* in Poland, **Juszczyk**; Seasonal movements of *Bufo bufo*, **Moore, H. J.**; Breeding migration by *Taricha rivularis*, **Twitty (1)**; Natural dispersal of *Aneides aeneus* recorded in Kentucky, **Williams & Gordon.**

Nesting Habits.—Of *Necturus*, **Harris, J. P., Jr.**; Functions of brooding behaviour in ♀ *Plethodon cinereus*, **Highton & Savage**; Nest-building by ♂ *Hyla faber*, **Lutz**; Nesting site of *Desmognathus wrighti*, **Organ (1)**; Nesting sites, egg laying and egg masses of *Desmognathus*, **Organ (2)**; Nesting site and egg masses of *Pseudotriton porphyriticus*, **Organ (3)**; Foam nests of *Rhacophorus leucomystax*, **Stolk (10).**

Parasitism.—Intestinal Protozoa of *Rana septentrionalis*, **Camara & Euttrey**; Plerocercosis of *Bufo arenarum*, **Funes & Padilla**; *Rana catesbeiana* host to a new tapeworm, **Jones, Cheng & Gillespie**; Haematozoa of Australian frogs, **Mackerras, M. & I. M.**; Amphibian parasitic diseases, **Reichenbach-Klinke**; *Brachycoelium salamandrae* in the small intestine of *Salamandra salamandra*, **Szabó**; *Rana esculenta* as second intermediate host in cycle of *Ascocotyle branchialis* sp. nov. (Trematoda), **Timon-David**; List of Amphibia as hosts of nematode parasites, **Walton (1)**; Amphibia as hosts of cestodes and acanthocephalans, **Walton (2).**

Population Studies.—Frequency of mutations in X-irradiated populations of *Bufo valliceps*, **Blair, W. F. (1)**; Seasonal patterns of reproductive activity in mixed anuran population and importance in respect to possible interpopulational competition, **Blair, W. F. (2)**; Distribution patterns and population densities in the submontane and montane zones of Cuernos de Negros, Philippine Islands, **Brown & Alcala**; Electrophoretic patterns of two sympatric and allopatric Argentine populations of *Leptodactylus ocellatus* and *L. chaquensis*, **Cei & Bertini (2)**; Populations of *Desmognathus fuscus* from Louisiana and Arkansas, compared, **Chaney**; Population dynamics, **Edelstein**; Amphibia in R. Elbe lowlands, Germany, **Garms**; *Eupsophus* now known from Chile (lat. 32° S. to 53° S.), represented by 5 species sympatric over a large area within the Valdivian Forest faunistic zone, **Grandison (1)**; *Crinia insignifera* populations on Rottnest Island, Australia; inheritance, fecundity, viability, yearly changes in morph frequency, and population size analyses, **Main**; Population density studies on anuran tadpoles, **Musialek**; Local distribution, life history and population dynamics of *Desmognathus* in Virginia, **Organ (2)**; Colour variations in *Acris crepitans* populations, **Pyburn (1)**; Population studies on *Taricha* in Sonoma Co., **Twitty (1).**

Technique.—Use of arthropods to prepare osteological specimens, **Banta (1)**; Technique for collecting in urban areas, **McCoy**; Collecting methods in a population study of *Desmognathus* in Virginia, **Organ (2).**

Territoriality.—Of *Hyla faber*, **Lutz.**

Venoms.—Poisonous function of *Rana chalconota* granular patches, **Liem.**

Voice.—Nightly records of calling activity in mixed anuran population in Texas over 4-year period, **Blair, W. F. (2)**; Mating call recordings of *Hyla bivocata* sp. n., **Duellman & Hoyt**; Audiospectrograph of *Hyla rufitela* mating call, **Fouquette**; Calls of *Cyclorana platycephalus*, *Limnodynastes spenceri*, *Neobatrachus sutor*, *Hyla rubella* and *Cyclorana cultripes*, **Lindgren & Main**; Mating call discrimination by *Pseudacris clarki* ♀, **Littlejohn (1)**; Call structure of *Crinia* ♂, **Littlejohn (3)**; Mechanics of sound production in North American *Bufo*, **McAlister (2)**; Vocalization as an isolating mechanism in frogs **Martof (1)**; Role of anuran mating calls in sexual isolation, **Mecham (3)**; Voices of New South Wales frogs, **Moore, J. A. (2)**; Call of *Kassina senegalensis*, **Wager (2)**; Call of ♂ *Rana wageri*, **Wager (3).**

GEOGRAPHICAL DISTRIBUTION

General : Zoogeography.—Zoogeographical study of the herpetofauna of Bulgaria, **Bedkov**; Ranges of the amphibians of Florida, **Carr & Goin**; Herpetology of Argentina, **Cei (1)**; Amphibian provinces of Uruguay, **Chebataroff**; Amphibians of North Carolina, **De Poe, Funderburg & Quay**; Geographic ranges of *Ambystoma macrodactylum* races in western North America, **Ferguson (1)**; Zoogeographic affinities of the herpetofauna of Tishomingo Co., Mississippi, **Ferguson (2)**; Zoogeographical study of Surinam, **Geijskes**; Distribution of *Ptychadena oxyrhynchus* and *P. abyssinica* in Africa, **Guibé & Lamotte (1)**; Zoogeographic relationships of the

herpetofauna of the Howard College Natural Area, Alabama, **Holman (1)**; Amphibia of Canada and Alaska, a check list, **Logier & Toner**; Relationships of animal geography between Australia and other continents, **Mertens (1)**; Preservation of animal provinces, **Mertens (2)**; Australian frogs, distributional patterns and zoogeographic regions, **Moore, J. A. (2)**; Of Amphibia in Southern Africa, **Poynton (1)**; Biogeography of south-east Africa, **Poynton (2)**; General anuran zoogeography, **Reig (3)**; Statistical zoogeography, study of regional populations, **Stugren & Rădulescu**; Fossil and recent amphibians, **Terent'ev (2)**; Distribution of *Gastrophryne mazatlanensis* in Northwestern Mexico and Southwestern U.S.A., **Wake.**

PALAEARCTIC REGION

Great Britain.—†*Worcestershire, Upton Warren* (*Rana temporaria*), **Coope, Shotton & Strachan**; *Ireland* (smooth newt), **Fenton**; *Ireland, Ulster* (*Triturus vulgaris*), **Forsyth**; *Dorset* (*Rana temporaria, Bufo bufo*), **Hawthorne**; †(Labyrinthodonts), **Panchen & Walker.**

Afghanistan.—(General), **Leviton & Anderson.**

Austria.—(Catalogue of Amphibia), **Eiselt**; *Steiermark* (*Pelobates fuscus, Bufo bufo, B. viridis*), **Kepka** *in* **Kepka & Schuster.**

Azores.—(*Rana esculenta*), **Ulfstrand.**

Belgium.—*Hautes Fagnes* (*Rana arvalis* and *Alytes obstetricans*), **Meeuwen**; *Verviétois* (key to species), **Rose, L.**

Black Sea area.—(Statistical survey), **Stugren & Rădulescu.**

Bulgaria.—(Herpetofauna), **Beškov.**

China.—†(Pliocene, *Rana*), **Liu.**

Corfu.—(General), **Mertens (3).**

Czechoslovakia.—(*Bombina bombina* and *B. variegata*), **Lác (1)**; *Orava River basin* (general), **Lác (2).**

France.—*Hautes-Pyrénées, Néouvieille Mt., Estibère Lakes* (*Rana temporaria, Triturus helveticus*), **Angelier**; *Grande-Brière* (general), **Bodin**; †*Chilleurs-aux-Bois* (Burdigalian sands (?), *Salamandra, Rana, Bufo*), **Chaline**; *Provence* (general), **Knoepffler (1).**

Germany.—*Dresden* (*Rana dalmatina*), **Fritzsche & Obst**; *R. Elbe lowlands* (general), **Garms**; *Gera* (general), **Kuhn (1)**; †(Fauna of the Solnhofener shales), **Kuhn (2).**

Greenland.—†(Devonian, *Ichthyostegalia*), **Jarvik.**

Italy.—*Tuscany, Bedizzano and Ritomboli caves* (*Hydromantes italicus*), **Lanza (1)**; *Tuscany* (cavernicole Anura and Urodela), **Lanza (3)**; *Tana del Leccio* (*Hydromantes*), **Lanza & Marcucci**; *Dolomites, Sesto* (*Salamandra atra*), **Marcuzzi.**

Japan. — *Okayama* (*Rana nigromaculata nigromaculata* × *R. n. brevipoda*), **Moriya.**

Lebanon.—†*Ksâr' Akil* (palaeolithic, *Hyla arborea*), **Hooijer.**

Mediterranean Region.—*Corsica* (general), **Goux (1)**; *Corsica* (*Euproctus montanus*), **Goux (2)**; (*Discoglossus* and others), **Knoepffler (3).**

Mongolia.—†(General), **Orlov.**

Netherlands.—*Massane Reserve* (general), **Bree**; *Limburg* (*Salamandra salamandra*), **Fonteyne (1)**; *Limburg* (*Bombina variegata*), **Fonteyne (2)**; (General), **Wijngaarden.**

North Africa.—*Morocco* (general notes), **Bons**; †*Sahara* (teeth replacement in Capitosauria), **Coudron**; †*Morocco, Beni Mellal* (Miocene, general), **Hecht, Hoffstetter & Vergnaud**; *Morocco* (unidentified tadpoles, *Alytes* or *Bombina* ?), **Pasteur.**

Poland.—*Kraków-Chrzanów Ridge and R. Wisła valley* (*Bombina*), **Michałowski (1)**; †(Salientia and Caudata), **Młynarski.**

Portugal.—(General), **Almaça.**

Roumania.—(*Triturus cristatus*), **Fuhn & Freytag**; *Siebenbürgen* (*Rana arvalis*), **Stugren & Kohl**; (General notes), **Stugren & Popovici (1)**; (*Bombina* variation), **Stugren & Popovici (2)**; *Ciric-Iassy* (*Rana ridibunda*), **Vancea, Mîndou & Simionescu.**

Russia.—†*Priural, Krasnyi Kamen* (Stegocephalia), **Chalyshev**; †*N. Dvina river* (*Tupilakosaurus*), **Shishkin.**

Spain.—*Guadalquivir* (general), **Valverde.**

Yugoslavia.—*Montenegro* (neotenous *Triturus alpestris*, two new subspp.), **Radovanović.**

ORIENTAL REGION

Hong Kong.—(*Megophrys brachykolos* sp. n.), **Inger & Romer.**

India.—(Caecilians), **Taylor**; *Portuguese India, Goa* (*Rana tigrina*), **Manaças.**

Philippine Islands.—*Cuernos de Negros* (amphibian population), **Brown & Alcala.**

AUSTRALIAN REGION AND POLYNESIA

Australia.—*Jigalong, W. Australia*, **Lindgren & Main**; *S.W. Australia* (*Crinia*), **Littlejohn (3)**; †*Canning Basin* (Triassic Blina shale, general remains), **McKenzie**; *Rottnest Island* (*Crinia insignifera* populations), **Main**; *Eastern New South Wales* (review of Anura), **Moore, J. A. (2).**

New Zealand.—(Frogs), **Barwick**; (Introduced frogs), **McCann**; (*Leiopelma* spp.), **Stephenson, E. M.**

ETHIOPIAN REGION

Africa.—*Kagera and Albert National Parks* (general), **Curry-Lindahl (2).**

Central Africa.—*S. Rhodesia, Mt. Selinda* (*Arthroleptis xenodactyloides*), **Bruggen**; *Congo, Mayombe* (general), **Laurent (2)**; *Congo, Stanley Pool* (Anura), **Skelton-Bourgeois (2)**; *Tchad* (herpetofauna), **Wake & Kluge.**

East Africa.—(Systematic list of Batrachia), **Skelton-Bourgeois (1).**

West Africa.—*Spanish Guinea* (*Rana goliath*), **Cuspinera**; *French West Africa* (*Phrynobatrachus guineensis* and *P. alticola* spp. nov.), **Guibé & Lamotte (2)**; *Sierra Leone, Tingi Hills* (*Bufo cristiglans* sp. n.), **Inger & Menzies**; (General), **Lamotte, Dzieduszycka & Lauwarier**; (General), **Lamotte & Perret (2)**; *French Guinea, Mt. Nimba* (*Nectophrynoides occidentalis*), **Lamotte & Roy (2).**

Madagascar.—(Batrachia), **Guibé**; †(Trias, Stegocephalia), **Lehman.**

NEARCTIC REGION

Alaska.—(Check list), **Logier & Toner.**

Canada.—*Quebec Prov.* (general), **Alexandre**; *New Brunswick* (*Plethodon cinereus*), **Cook & Bleakney**; *Quebec province, Iberville Co., Mt. Johnson* (*Hemidactylum scutatum*), **Denman**; *British Columbia, Storm Creek* (*Ascaphus truei*), **Grant, J.**; (Check list), **Logier & Toner**; *Lake Manitoba* (herpetofauna), **Tamsitt.**

United States.—*Eastern United States* (*Desmognathus ocoee*), **Valentine.**

North-Eastern States.—*Ohio* (County records), **Adler**; *Ohio* (new records), **Adler & Dennis**; *Eastern New York* (records), **Benton & Smiley**; *Ohio, Hamilton Co.* (herpetological records), **Collins & Haggard**; *West Virginia* (herpetology collection), **Green**; *Ohio* (general herpetology), **Hirshfeld & Collins**; *S.W. Virginia, Balsam Mts.* (general), **Organ (2)**; *Central Indiana* (*Plethodon* spp.), **Reynolds**; *Illinois* (critical review, distribution, ecology, variation), **Smith, P. W.**; *Cattaraugus Co., Allegany Indian Reservation* (general), **Stewart**; *Illinois* †(list and bibliography of amphibians), **Techter**; *Michigan, Saddle Lake* (*Siren intermedia nettingi*), **Williams, J. E.**

South-Eastern States.—*Tennessee* (cave dwellers), **Barr**; *North Carolina* (*Siren i. intermedia*), **Collette & Gehlbach**; *North Carolina* (general list), **DePoe, Funderburg & Quay**; *Mississippi, Tishomingo Co.* (herpetofauna), **Ferguson (2)**; *Alabama, Butler Co.* (*Phaeognathus hubrichti* gen. & sp. n.), **Highton (2)**; *Alabama, Birmingham region, Howard College Natural Area* (general), **Holman (1)**; †*Florida, Gilchrist Co.* (Miocene, *Proacris* gen. nov.), **Holman (2)**; *S.E. Florida* (new populations of West Indian amphibians), **King**; *Alabama, Macon Co.* (*Hyla versicolor* × *H. avivoca*), **Mecham (2)**; *North Carolina, Hyde and Tyrrell Counties* (general list), **Palmer & Whitehead**; *Louisiana* (*Acris crepitans* varieties), **Pyburn (1)**; *Southern Appalachians* (*Plethodon* spp.), **Reynolds**; *Arkansas* (*Desmognathus fuscus* races), **Smith, C. C.**

Middle and Western States.—†*Wyoming, Niobrara Co.* (*Opisthotriton* gen. nov.), **Auffenberg**; *Texas, Edwards plateau* (*Eurycea*), **Baker, J. K.**; *Nevada, Clark Co., Colorado R.* (*Hyla regilla*), **Banta (2)**; *Oklahoma* (*Hyla avivoca*), **Blair & Lindsay**; *Minnesota* (*Bufo hemiophrys*), **Breckenridge & Tester**; *Texas* (*Acris crepitans* varieties), **Pyburn (1)**; *Texas* (collection), **Webb & Packard.**

Pacific Coast States.—*California* (salamanders), **Brame, A. (1)**; *Oregon* (*Taricha granulosa*), **Livezey & Wyllie**; *Sonoma County, Pepperwood Creek* (*Taricha*), **Twitty (1).**

CENTRAL AMERICA

Central America.—(*Rhinophrynus dorsalis*), **Nelson & Hoyt.**

British Honduras.—(Herpetofauna), **Neill & Allen.**

Canal Zone.—(*Hyla rufitela* sp. n.), **Fouquette**; *Panama, Chiriquí Prov., Volcán Baru* (*Magnadigita marmorea* sp. nov.), **Tanner & Brame.**

Costa Rica.—(Salamanders), **Brame, A. (2)**; (*Crepidius*), **Savage & Kluge.**

Guatemala.—(*Bufo valliceps* races), **Baylor & Stuart.**

Mexico.—(*Ambystoma rosaceum*), **Anderson, J. D. (2)**; *Volcán Paricutin* (effect on amphibians), **Burt**; (New records), **Chrapliwy, Williams & Smith**; (*Ptychohyla* spp. nov.), **Duellman (1)**; *Chiapas* (*Hyla chaneque* sp. n.), **Duellman (2)**; *Oaxaca, Vista Hermosa* (general), **Duellman (3)**; *Chiapas* (*Hyla bivocata* sp. n.), **Duellman & Hoyt**; *Isla Cerralvo* (*Scaphiopus couchi*), **Etheridge**; *Sinaloa, El Dorado* (general), **Fugler & Dixon.**

SOUTH AMERICA

Andes.—*Of Peru and Bolivia* (frogs), **Vellard.**

Argentina.—†*Chubut province, Laguna del Hunco* (Eocene, *Shelania pascuali* gen. & sp. nov.), **Casamiquela (1)**; †*Patagonia* (*Notobatrachus*), **Casamiquela (2)**; (General), **Cei (1)**; *Misiones* (Anura), **Gallardo (1)**; *Buenos Aires* (*Hyla raddiana*), **Gallardo (4)**; (Herpetology), **Gallardo (6)**; †*Salta prov.* (*Saltenia* gen. nov.), **Reig (1)**; †*Patagonia* (Jurassic, Anura), **Reig (2).**

Bolivia.—(*Bufo* spp. n.), **Gallardo (5).**

Brazil.—(*Bufo manicorensis* sp. n.), **Gallardo (5)**; (*Habrahyla eiselti* gen. & sp. nov.), **Goin (3).**

Chile.—(*Bufo spinulosus* and *B. arunco*), **Cei (5)**; (*Eupsophus*), **Grandison (1).**

Colombia.—(*Amblyphrynus ingeri* gen. & sp. nov.), **Cochran & Goin**; †(General), **Porta.**

Ecuador.—(*Cochranella* spp. n.), **Goin (2).**

Surinam.—(General), **Audretsch (1) & (2)**; (General), **Geijskes.**

Uruguay.—(General), **Chebataroff**; (General), **Klappenbach.**

Venezuela.—(Salientia), **Rivero.**

PALAEONTOLOGY AND GEOLOGICAL DISTRIBUTION

Carboniferous.—(Labyrinthodonts), **Panchen & Walker.**

Cretaceous.—(Wyoming, *Opisthotriton* gen. nov.), **Auffenberg**; (*Saltenia* gen. nov.), **Reig (1).**

Devonian.—(*Ichthyostegalia*), **Jarvik.**

Jurassic.—(*Notobatrachus*), **Casamiquela (1)**; (Patagonia, Anura), **Reig (2).**

Miocene.—*Burdigalian* (?) (Chilleurs-aux-Bois, France, *Salamandra*, *Rana*, *Bufo*), **Chaline**; (Morocco, general), **Hecht, Hoffstetter & Vergnaud**; (Florida, *Proacris* gen. nov.), **Holman (2).**

Permian.—"*Kupferschiefer*" (general), **Kuhn (1).**

Pleistocene.—(Worcestershire, *Rana temporaria*), **Coope, Shotton & Strachan**; (Australia, speciation of *Crinia*), **Littlejohn (3).**

Pliocene.—(China, *Rana*), **Liu**; (Poland, Salientia and Caudata), **Mlynarski.**

Quaternary.—*Palaeolithic* (Lebanon, *Hyla arborea*), **Hooijer.**

Tertiary.—*Fotertiary* (Chubut province, Argentina, *Shelania pascuali* gen. & sp. nov.), **Casamiquela (1).**

Trias.—(Russia, Stegocephalia), **Chalyshev**; (Teeth replacement in Saharan Capitosauria), **Coudron**; (Madagascar, Stegocephalia), **Lehman**; *Blina shale* (Canning Basin, W. Australia, general), **McKenzie**; (Russia, *Tupilakosaurus*), **Shishkin.**

III.—SYSTEMATIC INDEX

THE ORDERS, AND FAMILIES AND GENERA WITHIN THEM, ARE ALPHABETICALLY ARRANGED.

References to the "Titles" are by the name(s) of the Author(s) printed in clarendon type.

Note.—The arrangement here used follows in general that of Romer's "Vertebrate Paleontology".

AMPHIBIA

General: Fossil.—†Quaternary remains from Chilleurs-aux-Bois, France, **Chaline**; †Outline of the palaeontology of vertebrates, **Orlov**; †Vertebrate localities in Triassic Blina shale of W. Australia, **McKenzie**; †Palaeozoological evidence of climate, **Romer, A. S.**; †List and bibliography of the amphibians of Illinois, **Techter.**

General: Recent.—New Ohio records, **Adler & Dennis**; Amphibia of the Massane Natural Reserve, Holland, **Bree**; Amphibia of the montane and submontane zones, Philippine Is., **Brown & Alcala**; Amphibia of Florida, **Carr & Goin**; Amphibia collected by the Instituto de Biología of Mendoza during 1961 Herpetological Expedition to the Misiones subtropical rain forest, Argentina, **Cei & Roig**; Type specimens in the United States National Museum, **Cochran (1)**; Living amphibians of the world, with notes and photos., **Cochran (2)**; Survey of amphibians of Buena Vista Co., Iowa, **Christiansen**; Ecological study of the amphibians in the Kagera and Albert National Parks, Africa, **Curry-Lindahl (2)**; List of amphibians in North Carolina, **De Poe, Funderburg & Quay**; Catalogue of Austrian amphibians, **Eiselt**; List of Amphibia from Tishomingo Co., Mississippi, **Ferguson (2)**; Systematic list of German Amphibia with key and figs., **Freytag (1)**; Amphibia of Argentina, **Gallardo (6)**; Review of limb regeneration, **Goss**; West Virginia Biological Survey collection in herpetology (2,802 Caudata, 639 Salientia), **Green**; Annotated list from the Howard College Natural Area, Alabama, **Holman (1)**; Amphibia of Provence, France, ecology, list of species, general notes, **Knoepffler (1)**; Key to the amphibians of Provence, France, vernacular names listed, **Knoepffler (2)**; Status of new amphibians described or collected by Loveridge, **Loveridge**; Amphibians of the Balsam Mts., S.W. Virginia, **Organ (2)**; Annotated list of specimens collected in Hyde and Tyrrell counties, North Carolina, **Palmer & Whitehead**; Neoteny, its interpretation, causes and phylogenetic significance, **Ryke & Eeden**; Annotated list of species seen in Allegany Indian Reservation, Cattaraugus Co., U.S.A.; localities and ecological notes given, **Stewart**; New localities in Roumania, **Stugren & Popovici (1)**; General study of amphibians, **Terent'ev (2)**; Distribution of batracians in the Andes, Peru and Bolivia, **Vellard**; Review of limb morphogenesis, **Zwilling.**

ORDER CAUDATA

Geographic distribution of species in Bulgaria, **Beškov**; Review of regeneration, **Brunst**; General notes and systematics of salamanders, **Freytag (4)**; Structure and evolution of the inner ear, origins of component ossicles, **Guth (2)**; Annotated list from the Howard College Natural Area, Alabama, **Holman (1)**; Species found on Mediterranean Islands, **Knoepffler (3)**; Annotated list of specimens collected in Hyde and Tyrrell counties, North Carolina, **Palmer & Whitehead**; Neoteny, its interpretation, causes and phylogenetic significance, **Ryke & Eeden**; Annotated list of species observed in Allegany Indian Reservation, Cattaraugus Co., U.S.A.; localities and notes on ecology, **Stewart.**

AMBYSTOMATIDAE

Ambystomatidae (correction of Ambystomidae) Hallowell 1856 (type-genus *Ambystoma* Tschudi 1838) proposed placement on Official List of Family–Group Names, **Smith & Tihen (1).**

Ambystomidae Hallowell 1856 (type-genus *Ambystoma* Tschudi 1838) (an invalid original spelling for Ambystomatidae) proposed placement on Official Index of Rejected and Invalid Family–Group Names, **Smith & Tihen (1).**

Amblystoma Agassiz 1846 (an invalid emendation of *Ambystoma* Tschudi 1838) proposed placement on Official Index of Rejected and Invalid Generic Names, **Smith & Tihen (1).**

Ambystoma Tschudi 1838 (type-species *Lacerta subviolacea* Barton 1804) proposed placement on Official List of Generic Names, **Smith & Tihen (1)**.

Ambystoma cingulatum bishopi, photo., Florida, **Carr & Goin.**

Ambystoma fluvinatum Taylor 1941, see *A. rosaceum*, **Anderson, J. D. (2).**

Ambystoma gracile gracile, larva, photo., **Freytag (4).**

Ambystoma jeffersonianum, larvae in Ohio and Kentucky, comparison with other north-eastern spp., **Brandon (2)**; Photo., **Cochran (2).**

Ambystoma laterale in north-eastern U.S.A., general notes, terrarium requirements, **Baarslag**; Critical thermal maximum, **Hutchison**; Illinois, variation, distribution and ecology, photo., **Smith, P. W.**

Ambystoma mabeei, critical thermal maximum, **Hutchison.**

Ambystoma macrodactylum, review of taxonomic history and key to adults of subspecies; detailed descriptions of subspecies given including distribution, variation, intergradation, statistical analyses, life history and ecology, **Ferguson (1)**; Photo., general study, **Freytag (2)**; *A. m. columbianum* **subsp. nov.** p. 313, fig. 1; Union Co., Oregon, **Ferguson (1)**; *A. m. croceum*, courtship behaviour, **Anderson, J. D. (1)**; From Santa Cruz Co., California, accepted as a valid subspecies, **Ferguson (1)**; *A. m. krausei* and *A. m. macrodactylum*, restricted and redefined; general morphology and distinguishing characteristics, variation, distribution, sex determination, statistical analyses, life history and ecology, **Ferguson (1)**; *A. m. sigillatum* **subsp. nov.** p. 316, fig. 3; Crater Lake, Crater Lake National Park, Oregon, **Ferguson (1).**

Ambystoma maculatum, north-eastern U.S.A., general notes, terrarium requirements, photo., **Baarslag**; Ohio and Kentucky larvae, comparison with other north-eastern spp., **Brandon (2)**; Photos., 1 coloured, **Cochran (2)**; Denervation and regeneration of larval forelimb, **Deck (1)**; Histological alterations in forelimbs after amputation and partial denervation, in the phases leading to a recognizable regeneration blastema, **Deck (2)**; Critical thermal maximum, **Hutchison**; Eggs preyed upon by caddisfly larvae, **Murphy**; Histochemical changes in differentiating pituitary, **Rhodes & Dalton**; Illinois, variation, distribution and ecology, photo., **Smith, P. W.**; Experiments on melanophores involved in tail darkening of hypophysectomized larvae, **Vankin & Dalton**; Cellular differentiation in organotypic and disaggregated tissue cultures, **Wilde**; Physiological responses of melanophores, **Zimmerman & Dalton.**

Ambystoma mexicanum, biochemistry of eggs treated with β-mercaptoethanol, **Brachet, Cape, Decroly et al.**; Photo., **Cochran (2)**; Homografting of sexually mature forms, **DeLanney**; Homograft reactions and their possible genetic implications, **DeLanney, Johnson & Woodham**; Experimental production of gill-lessness, **DeLanney & Neal**; Growth of pronephric system quantitatively analysed, **Fox, H. (1)**; Histology and histochemistry of macrothyrocytes, **Gabe**; Chromosomal deletion, **Humphrey**; Importance of time factors in the process of neural induction, **Johnen**; Use of quinaldine as an anaesthetic, **Katz, R. M.**; Regeneration from implanted dissociated cells, **Lagan**; Self-differentiation of limb regenerate transplanted with normal and reversed orientation after digital plate removal, **Michael & Faber**; Regenerative capacity of blastemal cells, **Roguski**; Histochemical changes in differentiating pituitary, **Rhodes & Dalton**; Induction of hepatic cirrhosis by 3-monohydroxycholanic acid treatment, **Stolk (3)**; Experiments on melanophores involved in tail darkening of hypophysectomized larvae, **Vankin & Dalton**; Acceleration of spinal cord regeneration through action of succinodinitril, **Winkelmann**; Physiological responses of melanophores, **Zimmerman & Dalton.**

Ambystoma opacum records from eastern New York, **Benton & Smiley**; Ohio and Kentucky larvae, comparison with other north-eastern spp., **Brandon (2)**; Fine structure of functional pronephros in larvae, **Christensen**; Col. photo., **Cochran (2)**; Photo., **Freytag (4)**; Fine structure of differentiating muscle in developing myotomes of larvae, **Hay**; Critical thermal maximum, **Hutchison**; Development of muscle and cartilage following deplantation of regenerating limb blastemata of larva, **Pietsch (2)**; Effects of heterotopic musculature on myogenesis during limb regeneration in larvae, **Pietsch (3)**; Histochemical changes in differentiating pituitary, **Rhodes & Dalton**; Illinois, variation, distribution and ecology, photo., **Smith, P. W.**

Ambystoma punctatum, experimental morphogenesis of adrenal glands, **Anderton (1) & (2)**; Variation of gastric mucosa cell division in larva, **Chiakulas & Scheving**; Postgastrula differentiation, **Finnegan (1)**; Differentiation of transplanted pancreatic rudiments, **Frye**; Effect of augmented innervation on growth and development of limb blastema, **Hutchinson & Rodenhauser**; Role of melanoblasts in development of epidermal melanophores, **Napp, M.**; Development of muscle and cartilage following deplantation of regenerating limb blastemata of larva, **Pietsch (2)**; Effects of heterotopic musculature on myogenesis during limb regeneration in larvae, **Pietsch (3)**; Effect of hypophysectomy on rhythmic mitotic rate in larval corneal epithelium, **Scheving & Chiakulas.**

Ambystoma rosaceum, morphology, life history, ontogenetic changes in colour pattern, habitat; synonymy to include *A. fluvinatum* Taylor 1941, *A. rosaceum nigrum* Shannon 1951, and *A. r. sonoraensis* Shannon 1951, distribution Mexico, **Anderson, J. D. (2).**

Ambystoma talpoideum, critical thermal maximum, **Hutchison**; Illinois, variation, distribution and ecology, photo., **Smith, P. W.**

Ambystoma texanum, Ohio and Kentucky larvae, comparison with other north-eastern spp., **Brandon (2)**; Illinois, variation, distribution and ecology, photo., **Smith, P. W.**

Ambystoma tigrinum, factors influencing Na balance, **Alvarado & Kirschner**; Photos., eggs and larva, **Cochran (2)**; Intracellular and external electrograms and a mecanogram of the heart, **Lapland, Tricoche & Gargouil**; Origin of choanae and choanal canal, **Medvedeva (1)**; Effects of heterotopic musculature on myogenesis during limb regeneration

in larvae, **Pietsch (3)**; Negative effects of certain environmental factors on neoteny and metamorphosis in Colorado populations, **TenBrock**; Electrical changes in heart on metamorphosis, **Tricoche, Lapland et al.**; *A. t. diaboli*, only urodele in Delta Marsh, Lake Manitoba, Canada, **Tamsitt**; *A. t. melanosticum* from Minnesota and Wyoming, weights and linear measurements of body and organs, **Latimer, Roofe & Feng**; Blood composition, **Roofe**; *A. t. tigrinum*, Illinois and Kentucky larvae, comparison with other north-eastern spp., **Brandon (2)**; Photo., Georgia, U.S.A., **Carr & Goin**; Lee Township, Buena Vista Co., Iowa, **Christiansen**; Illinois, variation, distribution and ecology, photo., **Smith, P. W.**

Axolot Bonaparte 1831, proposed suppression and placement on Official Index of Rejected and Invalid Generic Names, **Smith & Tihen (1)**.

Axolotus Jarocki 1822, proposed suppression and placement on Official Index of Rejected and Invalid Generic Names, **Smith & Tihen (1)**; *A. philadelphicus*, proposed suppression of *philadelphicus* Jarocki 1822, in this binomen, and placement on Official Index of Rejected and Invalid Specific Names, **Smith & Tihen (2)**.

Dicamptodon ensatus, larva, photo., **Freytag (4)**.

Gyrinus mexicanus, proposal to place *mexicanus* Shaw 1789, in this binomen, on the Official List of Specific Names, **Smith & Tihen (1)**.

Linguaelapsus texanus, photo., **Freytag (4)**.

Philhydrus Brookes 1828, proposed suppression and placement on Official Index of Rejected and Invalid Generic Names, **Smith & Tihen (1)**.

Phyllhydrus Gray 1831, proposed suppression and placement on Official Index of Rejected and Invalid Generic Names, **Smith & Tihen (1)**.

Ranodon sibiricus, development of the parasphenoid, **Lebedkina**; Origin of choanae and choanal canal, **Medvedeva (1)**; Embryonic development of lateral lines in the head, **Medvedeva (2)**; General notes, keeping in captivity, **Reijst.**

Rhyacotriton olympicus olympicus, detailed account of cranial morphology, **Cloete.**

Siredon Wagler 1830, proposed suppression and placement on Official Index of Rejected and Invalid Generic Names, **Smith & Tihen (1)**.

Siredon mexicanum, see under *Ambystoma*.

Sirenodon Wiegmann 1832, proposed suppression and placement on Official Index of Rejected and Invalid Generic Names, **Smith & Tihen (1)**.

Stegoporus Wiegmann 1832, proposed suppression and placement on Official Index of Rejected and Invalid Generic Names, **Smith & Tihen (1)**.

AMPHIUMIDAE

Amphiuma means, histology of pancreatic islets, **Miller**; *A. m. tridactylum*, critical thermal maximum, **Hutchison**; *A. tridactylum*, spermatozoa, **Baker, C. L. (1)**; Spermatolecosis, **Baker, C. L. (2)**.

CRYPTOBRANCHIDAE

Cryptobranchus alleganiensis, photos., **Cochran (2)**; New Mississippi state record, **Ferguson (2)**; *C. a. alleganiensis*, Illinois, variation, distribution and ecology, photo., **Smith, P. W.**; *C. japonicus*, growth of pronephric system quantitatively analysed, **Fox, H. (1)**.

Megalobatrachus japonicus davidianus, rearing in aquarium, habits, etc., **Šafránek.**

HYNOBIIDAE

Hynobius keyserlingii, development of the parasphenoid, **Lebedkina**; Origin of choanae and choanal canal, **Medvedeva (1)**; Embryonic development of lateral lines in the head, **Medvedeva (2)**; *H. nebulosus*, effects of androgenic hormone on gonad development, **Amanuma**; Growth of pronephric system quantitatively analysed, **Fox, H. (1)**; Notochord formation in explant from dorsal marginal zone of gastrula, **Ikushima**; General notes on keeping in captivity, **Reijst**; *H. nigrescens*, precipitin reactions and developmental arrest by antisera in embryo, **Inoue, K. (2)**; General notes on keeping in captivity, **Reijst.**

PLETHODONTIDAE

Calcified hyoid and mesopodial elements, use as systematic characters, **Uzzell.**

Aneides aeneus, new Ohio record, **Adler & Dennis**; Mainly in sandstone crevices but type locality Nickajack Cave, Marion Co., Tennessee, **Barr**; Photo., **Cochran (2)**; New Mississippi state record, **Ferguson (2)**; Locomotive activity and competition within the community, **Gordon, R. E. (1)**; Homing experiments, **Gordon, R. E. (2)**; Natural dispersal in Kentucky, **Williams & Gordon**; *A. ferreus*, photo., **Freytag (4)**; *A. flavipunctatus*, photo., **Cochran (2)**; *A. lugubris*, col. photo., **Cochran (2)**.

Batrachoseps wrighti, photo., **Freytag (4)**.

Desmognathus fuscus, comparison of Arkansas and Louisiana populations, **Chaney**; Electron microscopy of spermatid and spermatozoon, **Gatenby**; Response to thyroid-stimulating hormone administration, **Lynn & Dent (2)**; *D. fuscus*, *D. monticola*, *D. o. carolinensis*, *D. quadramaculatus*, *D. wrighti*, from Balsam Mts., S.W. Virginia. Study of local distribution, life history, population dynamics, **Organ (2)**; *D. fuscus auriculatus*, photo., Florida, **Carr & Goin**; Critical thermal maximum, **Hutchison**; From Florida, morphological comparison with *D. fuscus* races in Arkansas and Tennessee, **Smith, C. C.**; *D. f. brimleyorum*, photo., **Freytag (4)**; From Arkansas, *D. f. conanti*, from Arkansas, Alabama and Tennessee, distribution, morphological comparison with other *D. fuscus* races, **Smith, C. C.**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; *D. f. fuscus*, egg development under relatively dry conditions, **Brode**; Photo., partial albino from Ohio, **Gehlbach**; Critical thermal maximum, **Hutchison**; From N. Carolina, morphological comparison with other races from Arkansas and Tennessee, **Smith, C. C.**; *D. f. welteri*, new size record (170 mm. in total length) for ♂ taken from The Pinnacle, Cumberland Gap National Historical Park, Kentucky, **Barton & MacCallum**; *D. monticola*, critical thermal maximum, **Hutchison**; *D. ocoee* Nicholls 1949, synonymy to include *D. perlapsus*

Neill 1950, variation, relation to other *Desmognathus* spp. and distribution, **Valentine**; *D. ochrophaeus carolinensis*, probable pseudaposomatic function of colour pattern, mimicry of *Plethodon jordani* in Appalachian Mts., **Huheey**; Records of red-cheeked forms in North Carolina and Georgia with notes on apparent mimicry of *Plethodon jordani* and its possible evolution, **Huheey & Brandon**; Critical thermal maximum, **Hutchison**; *D. quadramaculatus*, col. photo., **Cochran (2)**; As predator of *Plethodon jordani*, **Huheey & Brandon**; Critical thermal maximum, **Hutchison**; *D. wrighti* from Virginia, life history, courtship, sex recognition, aggressive behaviour and spermatophore, **Organ (1)**.

Ensatina croceator, col. photo., *E. eschscholtzii*, photo., *E. klauberi* photo., **Cochran (2)**.

Eurycea bislineata bislineata, photo., **Freytag (4)**; *E. b. cirrigera*, photo., Georgia, U.S.A., **Carr & Goin**; *E. b. rivicola*, Illinois, variation, distribution and ecology, photo., **Smith, P. W.**; *E. b. wilderae*, critical thermal maximum, **Hutchison**; *E. latitans*, distribution in Texas, classification, **Baker, J. K.**; *E. longicauda*, col. photo., **Cochran (2)**; *E. l. guttolineata*, photo., Georgia, U.S.A., **Carr & Goin**; Critical thermal maximum, **Hutchison**; *E. l. longicauda*, coloration, cave dwelling, Tennessee, **Barr**; Variation, distribution and ecology in Illinois, *E. l. melanopleura*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; *E. lucifuga*, caves of Tennessee, **Barr**; Photo., **Cochran (2)**; Critical thermal maximum, **Hutchison**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; *E. melanopleura*, photo., **Cochran (2)**; *E. nana*, *E. neotenes*, *E. pterophila* and *E. troglodytes*, distribution in Texas, classification, **Baker, J. K.**

Gyrinophilus danielsi danielsi, cave dweller, Smoky Mountain Caves, Tennessee, **Barr**; Critical thermal maximum, **Hutchison**; *G. dunni*, col. photo., **Cochran (2)** *G. lutescens* proved to be a larval form of *G. porphyriticus duryi*, **Newcomer**; *G. palleucus*, troglobiont, pale in colour; reduced eyes; Crow Creek Valley caves, Franklin Co., Tennessee, **Barr**; *G. porphyriticus*, photo., **Cochran (2)**.

Hemidactylium scutatum, col. photo., **Cochran (2)**; Taken from Mt. Johnson, Iberville Co., Quebec, range extension in E. Canada, **Denman**; Critical thermal maximum, **Hutchison**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Hydromantes genei genei, photo., **Freytag (4)**; *H. gormani*, col. photo., **Cochran (2)**; *H. italicus*, cavernicole species from Tuscany, Italy, **Lanza (1)**; ♂ sexual cycle, **Lanza (2)**.

Leurognathus marmoratus intermedius, photo., **Freytag (4)**.

Lineatriton lineolus, calcified hyoid and mesopodial elements and use in determining systematic relationships, **Uzzell.**

Magnadigita marmorea **sp. nov.** p. 23, fig. 1; crater of Volcán Baru, Chiriquí Province, Panama, **Tanner & Brame**; *M. torresi*, photo., **Freytag (4)**.

Manculus quadridigitatus, critical thermal maximum, **Hutchison.**

†*Opisthotriton* **gen. nov.** p. 458, of Salamandroidea (? Plethodontidae) type sp. *O. kayi* **sp. nov.** p. 458, text-figs. 1–4; Niobrara Co., Wyoming, U. Cretaceous, **Auffenberg.**

Parvimolge townsendi, calcified hyoid and mesopodial elements and use in determining systematic relationships, **Uzzell.**

Phaeognathus **gen. nov.** p. 66 of Plethodontidae type sp. *P. hubrichti* **sp. nov.** p. 67, figs. 1 & 2; 3 mls. N.W. McKenzie on U.S. Route 31, Butler Co., Alabama, **Highton (2)**.

Plethodon cinereus, photo., eggs, col. illustr. adult, **Cochran (2)**; General notes, terrarium care, photo., **Freytag (3)**; Rates of desiccation and rehydration of eggs, **Heatwole (2)**; Relation of substrate moisture to absorption and loss of H_2O, **Heatwole & Lim**; Cannibalistic habits, **Heatwole & Test**; Functions of ♀ brooding behaviour, **Highton & Savage**; From central Indiana with a modified form of postfemoral spot, **Reynolds**; Association of erythristic colour phase with glacial boundaries, **Thurow**; *P. c. cinereus*, red phase from New Brunswick, **Cook & Bleakney**; Critical thermal maximum, **Hutchison**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; Distribution within the soil studied as a means of interpreting field captures, **Taub.**

Plethodon dorsalis, in twilight-zone of Tennessee caves, **Barr**; From central Indiana, with a modified form of postfemoral spot, **Reynolds**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Plethodon glutinosus, photo., **Cochran (2)**; Description of postfemoral spot found in specimens collected from the Southern Appalachians and Indiana, and possible significance of spot in taxonomic studies, **Reynolds**; *P. g. glutinosus*, general notes, terrarium care, photo., **Freytag (3)**; Critical thermal maximum, **Hutchison**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; *P. g. grobmani*, photo., Florida, **Carr & Goin.**

Plethodon jordani, col. photo., **Cochran (2)**; Locomotive activity and competition within the community, **Gordon, R. E. (1)**; *P. jordani* complex, description of postfemoral spot found in populations in the Southern Appalachians, and possible significance of spot for speciative studies discussed, **Reynolds**; *P. j. jordani*, probable aposomatic function of colour pattern and mimicry by *Desmognathus ochrophaeus carolinensis*, in Appalachian Mts., **Huheey**; Critical thermal maximum, **Hutchison**; *P. j. melaventris*, general notes, terrarium care, photo., **Freytag (3)**; Photo., **Freytag (4)**; Critical thermal maximum, **Hutchison**; Surface examination and histology of postfemoral spot found in specimens collected from the Southern Appalachians, figs., **Reynolds**; *P. j. metcalfi*, general notes, terrarium care, photo., **Freytag (3)**; Critical thermal maximum, **Hutchison**; *P. j. shermani*, probable aposomatic function of colour pattern and mimicry by *Desmognathus ochrophaeus carolinensis* in Appalachian Mts., **Huheey**; *P. j. shermani* mimicry by *Desmognathus ochrophaeus carolinensis* and its possible evolution; record of *D. quadramaculatus* as predator, **Huheey & Brandon**; Critical thermal maximum, **Hutchison**; *P. j. teyahalee*, critical thermal maximum, **Hutchison.**

Plethodon nettingi, terrestrial development, photo. of embryo, **Lynn.**

Plethodon wehrlei dixi, critical thermal maximum, **Hutchison.**

Pseudotriton montanus flavissimus, photo., Georgia, *P. m. floridanus*, photo., Florida, U.S.A., **Carr & Goin**; *P. m. montanus*, critical thermal maximum, **Hutchison**; *P. palleucus*, metamorphosis with iodine, **Blair, A. P.**; *P. porphyriticus*, new Mississippi state record, **Ferguson (2)**; Eggs and young, **Organ (3)**; *P. ruber*, col. photo., **Cochran (2)**; *P. r. ruber*, detailed account of cranial morphology, **Joubert**; *P. r. vioscai*, photo., Georgia, U.S.A., **Carr & Goin.**

Thorius pulmonaris, calcified hyoid and mesopodial elements and use in determining systematic relationships, **Uzzell.**

Typhlomolge rathbuni, photo., **Cochran (2)**; Neoteny, photo., **Lynn.**

Typhlotriton spelaeus, literature on eyes, **Brandon (1).**

HYBRIDS

Ensatina eschscholtzii oregonensis × *xanthoptica*, photo., **Freytag (4).**

Eurycea longicauda longicauda × *E. l. melanopleura*, Monroe Co., Illinois, photo., **Smith, P. W.**

PROTEIDAE

Necturus, thyroidectomy of cells of hypophysis, **Aplington (2)**; Review of reproduction, **Harris, J. P., Jr.**; *N. maculatus*, origin of choanae and choanal canal, **Medvedeva (1)**; *N. maculosus*, photos., eggs and adult, **Cochran (2)**; Photo., **Freytag (4)**; Oxidative and hydrolytic enzymes in the nephron, **Himmelhoch & Karnovsky**; Bile pigment excretions, **Lester & Schmid**; Annual growth zones: skull fig'd, **Peabody**; Ion and H_2O transport in the proximal tubules of the kidney, **Whittembury**; *N. m. maculosus*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Proteus anguinus, spermatophore, **Briegleb**; Col. photo., **Cochran (2)**; *Proteus Neo Caesariensis*, proposed suppression of *neocaesariensis* Green 1818, in this combination, and placement on Official Index of Rejected and Invalid Specific Names, **Smith & Tihen (2).**

SALAMANDRIDAE

Key to species in Belgium, **Rose, L.**

Chioglossa lusitanica, in Portugal, distribution, systematics and ecology, **Almaça.**

Cynops chinensis, photo., **Freytag (4)**; *C. orientalis*, photo., **Freytag (4)**; [*C.*] *Triturus pyrrhogaster*, role of entoblast in heart formation, **Amano**; Potency of lateral plate mesoderm relating to reproductive tissue formation, **Asayama**; Col. photo., **Cochran (2)**; ^{32}P uptake by the iris at the beginning of lens regeneration, **Eguchi & Ishikawa**; Appearance of extra limbs after partial exogastrulation, **Fautrez & Amano (1)**; Heart development stopped in embryo after extirpation of entoblast, **Fautrez & Amano (2)**; Sexual differentiation of larvae composed of heterosexual halves, **Furusawa**; Analysis of serologically active groups in embryos, **Inoue, K. (1)**; Precipitin reactions and developmental arrest by antisera in embryo, **Inoue, K. (2)**; Effect of nerve fibres on mitotic activity in regenerating adults, **Inoue, S.**; Influence of Li ion on presumptive ectoderm, **Masui**; Synthesis of actin in early embryos irradiated by X-rays, **Ogawa (1)**; Relation between the synthesis of contractile proteins in regenerating limb tissue, **Ogawa (2)**; Effects of glucuronic acid and related compounds on synthesis of skeletal muscle proteins in embryo, **Ogawa & Karube**; Laterality of induced limbs obtained by means of transplantation of *Bufo* limb bud to larvae, **Saito**; Local variation of mating behaviour in Japan, **Sawada**; *In vitro* differentiation of isolated endoderm, **Takata (1)**; Isolated endoderm differentiation in the presence of the neural fold, **Takata (2)**; Development of endodermal tissues from isolated ectoderm under the influence of guinea-pig bone marrow, **Takata & Yamada**; Technique for testing macromolecular samples in solution for morphogenetic effects on isolated ectoderm of gastrula, **Yamada & Takata**; Physiological responses of melanophores, **Zimmerman & Dalton.**

Diemictylus perstriatus, photo., Florida, **Carr & Goin**; [*D.*] *Triturus viridescens*, fusion of nucleoli in cells cultured from the heart, **Amenta**; Search for evidence of axial current flow in peripheral nerves, **Becker**; Effects of ribonuclease on regenerating limbs, **Bodemer**; Structure and ultrastructure of pituitary gland, **Cardell**; Photos., 1 coloured, **Cochran (2)**; Fine structure of spermatozoa, **Fawcett & Hilfer**; Inhibition of lens regeneration by implanted lenses in adult eyes, **Frost**; Second metamorphosis, **Grant, W. C., Jr.**; Effect of light on thyroid activity, **Grant & Waterman**; Coloration, habits, aquarium requirements, photo. of pair in amplexus, **Guppy**; Autoradiographic study to detect origin of blastema in regenerating limbs, **Hay & Fischman**; Fertilizability of coelomic and oviducal eggs, **Hughes, N. (1)**; Experimental removal of metaphase II inhibition in ova, **Humphries (1)**; Meiosis in coelomic and oviducal oocytes, spontaneous polyploidy and effects of heat shock on the first meiotic division, **Humphries (2)**; Oviducal environment and normal blockage of meiosis in oocytes, **Humphries (3) & (4)**; Histochemistry of polysaccharides in the oviduct, **Humphries & Hughes**; Syncoelous parabiosis of adults, **Jakowska**; Effects of chronic gamma irradiation, **Jakowska, Nigrelli & Sparrow (1)**; Radiobiological studies on normal and anaemic adults, **Jakowska, Nigrelli & Sparrow (2)**; Brain tumours, allied to human mengioma, shown to occur only when infected with *Diplostomulum*, **Lautenschlager**; *In vitro* ovulation; emphasis on maturation stage at which eggs are released, **Lee & Humphries**; Response to thyroid-stimulating hormone administration, **Lynn & Dent (2)**; Transplantation of adrenal tissue to post-metamorphic *Rana pipiens*, **Mizell, M.**; Some aspects of homograft-induced accessory limbs, **Ruben & Stevens**; Architectural regularity of subepidermal reticulum, **Schmidt, A. J.**; Bodies of Eberth in skin of larva, **Singer & Salpeter**; Sexual differences shown in skin homografts, **Squadroni & Wolsky**; Regeneration experiments with X-irradiated limbs, **Stinson**; Liver grafting experiments, **Williams, D. D. (1)**; Liver regeneration, **Williams, D. D. (2)**; Cytological investigation of oocyte nucleus, **Wischnitzer**; Fine structure of retinal photoreceptors, **Yoshida, M.**;

D. v. dorsalis, critical thermal maximum, **Hutchison**; *D. v. louisianensis*, distribution in Thunder Bay and Rainy River districts, Ontario, **Allin**; Hybridization, **Hughes, W. N.**; Critical thermal maximum, **Hutchison**; [*D.*] *Notophthalmus v. louisianensis*, Illinois, variation, distribution and ecology, photo., **Smith, P. W.**; [*D.*] *Triturus v. viridescens*, seasonal and sexual variation in the cytology of the pineal gland, **Dent (2)**; Endothelial myofilaments, **Hama (2)**; Hybridization, **Hughes, W. N.**; Critical thermal maximum, **Hutchison**; Forelimb regeneration, **O'Steen & Walker**; Lens regeneration in the presence of the host lens, **Reyer.**

Euproctus asper, mating behaviour in captivity, **Ahrenfeldt**; *E. montanus*, zoogeography, ecology and biology in Corsica, **Goux (1) & (2)**; *E. platycephalus*, photo., **Cochran (2).**

Molge, see under *Triturus.*

Neurergus crocatus, general notes and aquarium requirements, **Villwock.**

Notophthalmus, see under *Diemictylus.*

Pachytriton brevipes, ecology and anatomy, photos., **Freytag & Petzold.**

Paramesotriton deloustali, ecology and anatomy, photos., **Freytag & Petzold.**

Pleurodeles, morphogenetic effects of lipoic acid on embryos, **Brachet**; Effect of 5-fluorodeoxyuridine on embryos, **Tencer (1)**; *P. poireti*, col. photo., **Cochran (2)**; *P. waltli*, in Portugal, distribution, systematics, and ecology, **Almaça**; Somatic caryotype, figs., **Beetschen & Jaylet**; Influence of illumination on crystalline lens regeneration, **Borsuk & Popov**; Biochemistry of eggs treated with β-mercaptoethanol, **Brachet, Cape, Decroly et al.**; Development of adrenals, **Certain**; Experimental sex reversal by diethylstilboestrol, **Collenot**; Action of toluidine blue on regeneration of extremities, **Csaba, Bierbauer & Törö**; Protein content during development, **Denis**; Dimensionless characteristics of duration of development, **Dettlaf, T. A. & A. A. (1) & (2)**; Experimental embryology, **Dollander, Cury & Brouant**; Experimental double sex reversal, **Gallien**; Used as host in tracer experiments with heterogeneous archencephalic inductors, **Kuusi**; Development of the parasphenoid, **Lebedkina**; Origin of choanae and choanal canal, **Medvedeva (1)**; Effect of sexual hormones on nucleic acid metabolism in embryo, **Rickenbacher**; Polysaccharide distribution in cleaving eggs, **Sentein (1)**; Determination of the mitotic furrow formation during egg cleavage, **Sentein (2)**; Segmentation of the egg, **Sentein (3)**; Embryonic development, evolution and homologies of sensory lines and dermal bones of the cheek, **Stensiö**; Ecology in Guadalquivir swamps, Spain, **Valverde.**

Salamandra atra, from Sesto, Italy, **Marcuzzi**; Constitution of alkaloids, **Schöpf.**

Salamandra cinerea, proposal to place *cinerea* Green 1818, in this binomen, on the Official List of Specific Names, **Highton (1).**

Salamandra erythronota, proposed suppression of *erythronota* Rafinesque 1818, in this combination, and placement on Official Index of Rejected and Invalid Specific Names, **Highton (1).**

Salamandra maculosa, see under *S. salamandra.*

Salamandra [*salamandra*] *maculosa*, innervation of heart, **Abrahám**; *S. salamandra*, in Portugal, distribution, systematics, and ecology, **Almaça**; *S.* [*salamandra*] *maculosa*, under a stone from between Piclendèche and La Chapelle-des-Marais, **Bodin**; *S. salamandra*, photo., **Cochran (2)**; Occurrence in Limburg, Holland, **Fonteyne (1)**; *S.* [*salamandra*] *maculosa*, hypoglossal (spino-occipital) foramen in occipital crest of chondrocranium, **Fox, H. (2)**; *S. salamandra*, sources and nature of salivary secretions, **Francis**; Histology and histochemistry of macrothyrocytes, **Gabe**; *S.* [*salamandra*] *maculosa*, experimental cutaneous hyperplasy, **Idelman**; *S. salamandra*, spinal cord induction during tail regeneration, **Kiortsis & Droin**; In the Orava River basin, Czechoslovakia, altitude limit, **Lác (2)**; Regenerative capacity of blastemal cells, **Roguski**; *S.* [*salamandra*] *maculosa*, constitution of alkaloids, **Schöpf**; *S. salamandra*, statistical survey, Black Sea area, **Stugren & Rădulescu**; From Hungary, small intestine parasitized by *Brachycoelium salamandrae*, **Szabó**; *S. s. quadri-virgata*, biennial sexual cycle of ♀ in the Hautes-Pyrénées, **Joly, J.**; Sexual dimorphism, study on blood composition, **Saint-Girons.**

Salamandra tigrina, proposal to place *tigrina* Green 1825, in this binomen, on the Official List of Specific Names, **Smith & Tihen (2).**

Taricha, genetic analysis of species characteristics through hybrid experiments, **Twitty (2)**; *T. granulosa*, migration, **Carl**; Photo., **Cochran (2)**; Coloration, breeding habits, photo. of pair in amplexus, **Guppy**; Critical thermal maximum, **Hutchison**; Morphological variation between local populations in Oregon, **Livezey & Wyllie**; Feeding behaviour, **Packer**; Homing behaviour, **Twitty (1)**; *T. rivularis*, photo., **Cochran (2)**; Feeding behaviour, **Packer**; Homing behaviour and hybridization, ×*T. torosa* and ×*T. sierrae*, **Twitty (1)**; *T. torosa*, pineal regeneration during development, **Cintron & Kelly**; Photo., **Cochran (2)**; Experimental production of gill-lessness, **DeLanney & Neal**; Relationship of macrophages to melanophore development during metamorphosis, **Duncan**; Postgastrula differentiation of hypomere, **Finnegan (2)**; Nuclei and intercellular matrix variation during somite differentiation, **Finnegan (3)**; [*Taricha*] *Triturus torosus*, heart determination, **Jacobson, A. G. (2)**; *T. torosa*, histology of pancreatic islet and experimental work on blood sugar levels, **Miller**; Transfilter neural induction of ectoderm, **Saxén**; On blood glucose and pancreatic islets, **Wurster & Miller.**

Triton, see under *Triturus.*

Triturus sp., localization of RNA in oocytes, **Ficq**; Role of chromosomal translocations in evolution and speciation, **White.**

Triturus alpestris, activation of tissue in limb stumps before blastema formation, **Anton**; *Triton* [*Triturus*] *alpestris* found in the Grande-Brière region and north at Ille-et-Vilaine, **Bodin**; *T. alpestris* induction of the nervous system in embryos, **Correia & Gallera**; Effects of external stimuli on the structure and permeability of the egg cortex, **Dollander & Bonhomme**; Experimental embryology, **Dollander, Cury & Brouant**; Effects of centrifugation on unsegmented eggs, **Dollander & Maillet**; Morpho-

genesis and histogenesis of cerebral tissue explants, **Gallera** ; Courting behaviour, **Gauss** ; Habits in captivity and in natural biotopes modified by man, **Heusser** ; Effect of novocain on embryological development, **Koller** ; Used as host in tracer experiments with heterogeneous archencephalic inductors, **Kuusi** ; In the Orava River basin, Czechoslovakia, ecology, measurements, altitude limit, **Lác (2)** ; Larval development with central nervous system and ectomesoderm removed, **Mangold** ; New localities for neotenous forms in Yugoslavia, **Radovanović** ; Effect of sexual hormones on nucleic acid metabolism in embryo, **Rickenbacher** ; Embryonic development, evolution and homologies of sensory lines and dermal bones of the cheek, **Stensiö** ; 2 ribonucleo-proteins in the nucleolus of intestinal carcinoma, **Stolk (2) & (4)** ; Statistical survey, Black Sea area, **Stugren & Rădulescu** ; *T. a. piperianus* p. 213, fig. 7 ; Kapetanovo and Manito Jezero ; *T. a. serdarus* p. 211, fig. 6 ; Zminičko Jezero, Yugoslavia, **subspp. n., Radovanović.**

[*Triturus*] *Triton blasii* collected from Crossac, **Bodin.**

Triturus boscai, in Portugal, distribution, systematics and ecology, **Almaça.**

Triturus chinensis, see under *Cynops.*

Triturus cristatus, histochemical study of acid phosphatase distribution in the regenerating medulla oblongata, **Bertolini** ; Localization of acid phosphatase in the muscles and connective tissue of the regenerating tail, **Bertolini & Moretti** ; [*Triturus*] *Triton cristatus* found at Crossac, **Bodin** ; Experimental embryology at tail bud stage, **Farinella-Ferruzza** ; Sources and nature of salivary secretions, **Francis** ; Taxonomic revision of Roumanian subspecies, **Fuhn & Freytag** ; Patterns of synthesis in lampbrush chromosome loops, **Gall & Callan** ; Courting behaviour, **Gauss** ; ♂ description of " cauda bifida ", **Kiortsis** ; Spinal cord induction during tail regeneration, **Kiortsis & Droin** ; ♂ sexual cycle, **Lanza (2)** ; Ultrastructure of larval branchial epithelium, **Marini** ; [*Triturus*] *Triton cristatus*, origin of choanae and choanal canal, **Medvedeva (1)** ; *T. cristatus*, intraperitoneal injection of Ca^{45} and its elimination, **Pora & Ghircoiașiu** ; Part played by skin and internal tissues during limb regeneration, **Rahmani & Kiortsis** ; Larvae fed on snails in aquarium, effect on development, **Stolk (11)** ; Statistical survey, Black Sea area, **Stugren & Rădulescu** ; Effects of irradiation on regeneration, **Wolff** ; *T. c. carnifex*, mitotic activity in developing spinal medulla, **Baffoni (1)** ; Mitotic activity during mielencephalon development, **Baffoni (2)** ; Mitotic activity during prosencephalon development, **Baffoni (3)** ; Proliferation of the prosencephalon during development, **Baffoni (4)** ; *T.* [*cristatus*] *carnifex*, photo., **Cochran (2)** ; Electron microscope study of spermatozoa, **Furieri** ; Egg involucra, cf. *Discoglossus pictus*, **Ghiara** ; Regeneration of isolated spinal medulla segment in adult, **Marini & Margotta** ; Vascularization of the hypophysis in normal conditions and after it has been separated from the hypothalamus, **Peyrot** ; *T. c. cristatus*, taxonomic review and distribution in Roumania, **Fuhn & Freytag** ; *T.* [*cristatus*] *danubialis*, photo., **Cochran (2)** ; *T. c. dobrogicus* Kiritzescu 1903, synonymy to include *T. c. danubialis* Wolterstorff 1923 ; taxonomic review, lectotype described, ecology and distribution in Roumania, **Fuhn & Freytag.**

Triturus helveticus, in Portugal, distribution, systematics and ecology, **Almaça** ; Reproductive cycle in mountain lakes in S. France, **Angelier** ; [*Triturus helveticus*] *Triton palmatus* found in the Grande-Brière region, France, **Bodin** ; *T. helveticus*, dimensionless characteristics of duration of development, **Dettlaf, T. A. & A. A. (1) & (2)** ; Experimental embryology, **Dollander, Cury & Brouant** ; Sources and nature of salivary secretions, **Francis** ; Used as host in tracer experiments with heterogeneous archencephalic inductors, **Kuusi** ; Polysaccharide rich parts of cleaving eggs, **Sentein (1)** ; Determination of the mitotic furrow formation during egg cleavage, **Sentein (2)** ; Larvae fed on snails in aquarium, effect on development, **Stolk (11).**

Triturus marmoratus, in Portugal, distribution, systematics and ecology, **Almaça** ; [*Triturus*] *Triton marmoratus* several examples from Crossac, **Bodin** ; *T. marmoratus*, ecology in the Guadalquivir swamps, Spain, **Valverde.**

Triturus montandoni, in the Orava River basin, Czechoslovakia, ecology, measurements, altitude limit, **Lác (2).**

Triturus orientalis see under *Cynops.*

Triturus palmatus, see under *T. helveticus.*

Triturus pyrrhogaster, see under *Cynops.*

Triturus rivularis, see under *Taricha.*

Triturus taeniatus, appearance of extra limbs after partial exogastrulation, **Fautrez & Amano (1)** ; Habits in captivity and in natural biotopes modified by man, **Heusser** ; [*Triturus*] *Triton taeniatus*, origin of choanae and choanal canal, **Medvedeva (1)** ; *T. taeniatus*, development of transplants in anuran tadpole hosts, **Rossi (1)** ; [*Triturus*] *Triton taeniatus*, immuno-biological study of the process of lens regeneration, **Vyazov & Sazhina.**

Triturus torosus, see under *Taricha.*

Triturus viridescens, see under *Diemictylus.*

Triturus vulgaris, activation of tissue in limb stumps before blastema formation, **Anton** ; [*Triturus*] *Triton vulgaris* found at Crossac and Trignac, France, **Bodin** ; *T. vulgaris*, photos, 1 col., **Cochran (2)** ; Distribution in Ireland, **Forsyth** ; From R. Elbe lowlands, Germany, **Garms** ; Courting behaviour, **Gauss** ; Used as host in tracer experiments with heterogeneous archencephalic inductors, **Kuusi** ; In the Orava River basin, Czechoslovakia, ecology, altitude limit, **Lác (2)** ; [*Triturus*] *Triton vulgaris*, postembryonic multiplication of muscle fibres, **Lobyntsev** ; Thyreostatic effect of $KClO_4$, **Pflugfelder** ; Transfilter neural induction of ectoderm, **Saxén** ; Used to test combined effect of two types of inductors mixed in different ratios, **Saxén & Toivonen** ; Larvae fed on snails in aquarium, effect on development, **Stolk (11)** ; Statistical survey, Black Sea area, **Stugren & Rădulescu** ; Neuralizing and mesodermalizing of gastrula epidermal explants, **Toivonen** ; Inductive action of HeLa-cells implanted into gastrulae, **Toivonen, Saxén & Vainio** ; Ouddorp, Dirksland, Holland, **Wijngaarden** ; *T. v. graecus*, in Corfu, synonymy, distribution and habitat, **Mertens (3).**

Hybrids

[*Diemictylus*] *Triturus viridescens viridescens* × *T. v. louisianensis*, reciprocal diploid and triploid hybrids, **Hughes, N. (2).**

Taricha rivularis × *T. torosa* and *T. rivularis* × *T. sierrae*, **Twitty (1)**; *T. rivularis* × *T. torosa sierrae* and *T. rivularis* × *T. torosa torosa*, artificially produced hybrids used for fertility tests and for genetic analysis of species characteristics, **Twitty (2).**

Taricha sierrae × *T. rivularis*, **Twitty (1).**

Taricha torosa, hybridization, × *T. rivularis*, **Twitty (1).**

[*Triturus helveticus*] *Triton palmatus* ♀ × *T. cristatus* ♂, changes in DNA and RNA during embryonic development of merogone, **Chen & Zeller.**

Triturus vulgaris × *T. alpestris*, courting behaviour, **Gauss.**

Sirenidae

Pseudobranchus striatus, col. photo., **Cochran (2)**; *P. s. axanthus*, photo., Florida, **Carr & Goin.**

Siren intermedia intermedia, photo., Florida, **Carr & Goin**; Locality records in North Carolina, measurements and notes on stomach contents and eggs, **Collette & Gehlbach**; *S. i. nettingi*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; First record from Michigan, **Williams, J. E.**; *S. lacertina*, grown in captivity from 350–950 mm., a size record, **Goin (4)**; *S. operculata*, proposed suppression of *operculata* Beauvois 1799, in this binomen and placement on Official Index of Rejected and Invalid Specific Names, **Smith & Tihen (2).**

ORDER GYMNOPHIONA

Caeciliidae

Caecilia ochrocephala, photo., **Cochran (2).**

Geotrypetes s. seraphini, from Mayombe, Congo; note on characters, colour, ecology and habits, **Laurent (2).**

Herpele squalostoma, from Vemba and Kitadi, Congo; note on ecology, habits and food, **Laurent (2).**

Indotyphlus battersbyi, figs., India, ecology and systematics, **Taylor.**

Ichthyophis beddomii Nilgiris, *I. bombayensis* Waghai Surat, *I. malabarensis* Maduvangard, *I. peninsularis* Malabar, *I. sikkimensis* Darjeeling, *I. subterrestris* Kottayam, *I. tricolor* Maddathori, India, anatomy and systematics, **Taylor.**

Schistometopum thomensis, col. photo., **Cochran (2).**

Siphonops annulatus, photos., 1 coloured, **Cochran (2)**; *S. paulensis*, first record of egg laying, **Gans (3).**

Uraeotyphlus malabaricus, Ootacamund, Nilgiris, S. India, structure, **Taylor.**

SUPER ORDER LABYRINTHODONTIA

†Tupilakosauridae **fam. nov.** p. 938 of Brachyopoidea for *Tupilakosaurus* Nielsen 1954, **Shishkin.**

†*Tupilakosaurus wetlugensis* **sp. nov.** p. 938, text-figs. 1–4; Vetluga series Trias, N. Dvina River, Russia, **Shishkin.**

ORDER ICHTHYOSTEGALIA

†*Ichthyostega* sp., Upper Devonian, East Greenland, **Jarvik.**

†*Ichthyostegopsis* sp., Upper Devonian, East Greenland, **Jarvik.**

ORDER RHACHITOMI

†*Benthosuchus madagascariensis* **sp. nov.** p. 127, text-figs. 4–14; Madiromiary, Madagascar, Trias, **Lehman.**

†*Promelanerpeton* **gen. nov.** p. 3 [probably allied to Peliontidae Moodie 1916] for *P. sacheti* p. 3, text-fig. 1C; Permian, Germany, **Kuhn (1).**

†*Wetlugasaurus* sp., figs., Trias, Madagascar, **Lehman.**

ORDER STEREOSPONDYLI

†*Stenotosaurus*, tooth replacement, Trias, Gour Laoud, Sahara, **Coudron.**

†*Wantzosaurus elongatus* **sp. nov.** p. 104, text-figs. 1, 2; Eotrias, Ambilobe, Madiromiary, Madagascar, **Lehman.**

SUPER ORDER SALIENTIA

Recent county records for the frogs and toads of Ohio, **Adler**; Form and function of larval fore-gut with particular reference to the *manicotto glandulare*, **Griffiths**; Annotated list of specimens collected in Hyde and Tyrrell counties, North Carolina, **Palmer & Whitehead**; Salientia of Venezuela, historical resumé, keys to families, figs., **Rivero**; Annotated list of species seen in Allegany Indian Reservation, Cattaraugus Co., U.S.A.; localities and ecological notes given, **Stewart.**

ORDER ANURA

Geographic distribution of species in Bulgaria, **Beškov**; Evolutionary process in Chilean forms, **Cei (4)**; Anura from Misiones, Argentina, **Gallardo (1)**; Structure and evolution of the inner ear, origins of component ossicles, **Guth (2)**; Annotated list from the Howard College Natural Area, Alabama, **Holman (1)**; Comparative anatomy of the thyroid glands of Japanese frogs, **Iwasawa (4)**; Species found on Mediterranean islands, **Knoepffler (3)**; Isolating mechanisms; review of literature, **Mecham (3)**;

Effect of population density on growth and development of tadpoles, **Musialek**; Check-list of species in Kruger National Park, **Pienaar**; Key to species in Belgium, **Rose, L.**; Comments on taxonomy and systematics based upon comparative anatomy, **Stadie**; Evolutionary aspects of possible relation of pineal complex and subcommissural organ to thermoregulation and water-metabolism, **Steyn**; Development of the Mm. petrohyoidei during metamorphosis, **Unayama.**

SUBORDER AMPHICOELA

†*Vieraella* **gen. nov.** p. 76 of Amphicoela or Archaeobatrachia, genotype *V. herbstii* **sp. nov.** p. 76, text-fig. 1; Roca Blanca, Magallanes dept., Santa Cruz prov., Patagonia, Lias, **Reig** (2).

ASCAPHIDAE

Ascaphus truei, col. photo., **Cochran** (2); Collected near the headwaters of Storm Creek, Flathead River, S.E. British Columbia, **Grant, J.**

Leiopelma, see under LEIOPELMIDAE.

ATELOPODIDAE

Key to Venezuelan genera, **Rivero.**

Atelopus boulengeri, col. photo., **Cochran** (2); *A. cruciger cruciger* and *A. c. vogli*, range, additional locality records, habits, Venezuela, **Rivero**; *A. moreirae*, see *Melanophryniscus* gen. nov., of Brachycephalidae, **Gallardo** (2); *A. oxyrhynchus*, range, additional locality records, habits, Venezuela, **Rivero**; *A. planispina*, col. photo., **Cochran** (2); *A. stelzneri* and *A. tumifrons*, see *Melanophryniscus* gen. nov., of Brachycephalidae, **Gallardo** (2); *A. zeteki*, photos., 1 col., **Cochran** (2).

Dendrophryniscus, nomenclatorial note, **Gallardo** (2); *D. stelzneri*, chromosome number, **Saez-N. Brum.** See also references under *Melanophryniscus* and *Atelopus.*

Oreophrynella quelchii macconnelli and *O. q. quelchii*, range, additional locality records, habits, Venezuela, **Rivero.**

BRACHYCEPHALIDAE

Dendrobates, see under DENDROBATIDAE.

Melanophryniscus **gen. nov.** p. 72 of Brachycephalidae, type-sp. *Hyla stelzneri* Weyenbergh 1875, genus includes *Atelopus stelzneri*, *A. moreirae* and *A. tumifrons*, **Gallardo** (2); *Melanophryniscus* **gen. nov.** p. 207 of Brachycephalidae type-sp. *M. stelzneri* (Weyenbergh) 1875, fig. 1; *M. s. stelzneri*, *M. s. fulvoguttatus*, *M. s. atroluteus* and *M. s. dorsalis* synonymies and distribution, key, *M. stelzneri spegazzinii* **subsp. nov.** p. 209, fig. 4; Viña, Salta, Argentina, **Gallardo** (7).

Phyllobates, see under DENDROBATIDAE.

BREVICIPITIDAE, see under MICROHYLIDAE.

BUFONIDAE

Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths**; Key to Venezuelan genera, **Rivero.**

†Bufonidae, from the Miocene of Beni Mellal, Morocco, **Hecht, Hoffstetter & Vergnaud.**

Ansonia [*longidigita*] *gryllivoca*, col. photo., **Cochran** (2).

Bufo, systematic value of seroprotein electroferograms of Argentine species, **Bertini & Cei**; Inter- and intragroup genetic compatibility, **Blair, W. F.** (3); Localization of RNA in oocytes, **Ficq**; Mechanics of sound production in North American species, **McAlister** (2); Comparison of the Mexican-type and American-type skulls, **Sanders**; Effect of 5-fluorodeoxyuridine on embryos, **Tencer** (1); Taxonomy from a biometrical viewpoint, **Terentyev** (1).

Bufo alvarius, photos., **Cochran** (2); Oviposition and egg morphology, **Savage & Schuierer.**

Bufo americanus, habits and vivarium requirements, **Bustard**; Col. photo., **Cochran** (2); Effect of chemicals on tadpole respiration, **Lewis & Frieden**; Spent ♀ observed clasping gravid ♀ in captivity, **Martof** (2); Affinities with *B. terrestris*, **Sanders**; *B. a. americanus*, new Ohio records, characters of Holme Co., specimens, **Adler & Dennis**; From Grant Township, Buena Vista Co., Iowa, **Christiansen**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; *B. a. charlesmithi*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Bufo anderssoni Melin, may be a synonym of *B. g. guttatus*, **Rivero.**

Bufo arenarum, influence of pH and chemicals on testis, **Astrada**; Metabolism of p-dimethylaminoazobenzene (butter yellow), **Bertini**; In Argentina, systematic value of seroprotein electroferograms, **Bertini & Cei**; Biochemistry of kidney, **Bonet** (1); Action of pitressine and syntocine on isolated kidney, **Bonet** (2); Water elimination and retention after hypophysectomy, **Chiaraviglio** (1); Thyroxine in blood, **Donoso**; Effect of insulin on glycogenolysis of perfused liver, **Flores**; Oxygen and glucose liberation from perfused liver, **Flores & Dalmasso**; Isolation of 5-hydroxytryptamine from skin, **Frydman & Deuloffu**; Body cavity parasitized by a cestode, **Funes & Padilla**; Teratological case, figs., **Gaggero**; Electron microscopy of spermatid and spermatozoon, **Gatenby**; Sex determination of interphase nuclei, **Laguens & Palatnik**; Morphological bases for a nursing role of glia in the retina, **Lasansky, A.**; Chemical composition of blood, **Lecuona**; Water metabolism studies, **Madoery de Bonet, Chiaraviglio & Lanfri**; Biochemistry of isolated liver, **Perassi**; Histochemistry of skin, **Prieto Díaz, Gómez Dumm & Iturriza**; Cytological study of hypophysis, **Prieto Díaz, Iturriza & Gómez Dumm**; Histochemistry of isolated cell islands in pancreas, **Prieto Díaz & Tucci de Gorini** (1); Histochemical study of Bidder's organ, **Prieto Díaz & Tucci de Gorini** (2); Absorption and accumulation of vitamin A_1 **Radice** (1); Fluorescent properties of the stratum cribosum of Katschenko, **Radice** (2); Water elimination by kidney, **Taleisnik & Capmourteres**; Iodoradiothyroidectomy, **Trivelloni, Donoso & Bur.**

Bufo arunco (Molina) see *B. spinulosus* Wiegmann, **Cei** (5).

Bufo blombergi, col. photo., **Cochran** (2).

Bufo boreas, histology of pancreatic islets, **Miller**; *B. boreas* group, comparison of eggs, figs., oviposition and egg morphology, **Savage & Schuierer**; *B.b. boreas*, breeding season affected by water conditions, **Metter.**

Bufo bufo, in Portugal, distribution, systematics and ecology, **Almaça**; *B.* [*bufo*] *vulgaris* in the region of Grande-Brière, **Bodin**; Steroids of the testis and Bidder's organ, **Chieffi & Lupo**; *B. bufo*, photos., **Cochran** (2); Pulmonary eosinophilia, **Dokov**; Sources and nature of salivary secretions in adult, **Francis**; Histology and histochemistry of macrothyrocytes, **Gabe**; From R. Elbe lowlands, Germany, **Garms**; Transplantation experiments in the genital region of embryos, **Ghirardelli** (1) & (2); Factors regulating the formation of the gonad and Bidder's organ in embryonic and larval forms, **Ghirardelli** (3); Factors determining migration of cells from primary ureter, **Gipouloux & Cambar**; Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths**; In Dorset, field notes, **Hawthorne**; Effect of non-mammalian pituitary extracts on water-relations, **Heller & Pickering**; Habits in captivity and in natural biotopes modified by man, **Heusser**; Moulting and its hormonal control, **Jørgensen & Larsen**; In Steiermark, Austria, **Kepka** *in* **Kepka & Schuster**; In the Orava River basin, Czechoslovakia, ecology, altitude limit, **Lác** (2); *B.* [*bufo*] *vulgaris*, influence of gibberellins on embryo, **Liotti** (1); Treatment of larvae with thyroxine and $CoCl_2$, **Liotti** (2); *B. bufo*, effect of chlorotetracycline on larval tail regeneration, **Manelli** (1); Effects of low temperatures on eggs and embryos, **Manelli** (2); Seasonal movement, **Moore, H. J.**; Fluorescence of tetracycline antibiotics in bone, **Muzii & Caravita**; Action of serotonin on metamorphosis, **Niaussat, P. & Mme.**; RQ and $C^{14}O_2$ incorporation during development, **Petrucci**; Antigen studies, **Ranzi, Citterio & Samuelli**; *B.* [*bufo*] *vulgaris* effect of benzoquinone on larval tail regeneration, **Raunich** (2); Development of neural fold material after homoplastic transplantation into the orbit of differentiated tadpoles, **Raunich** (6); Chemical embryology, **Raunich** (8); *B. bufo*, experimental studies on nervous system development, **Rossi** (2) & (3); Nervous coordination during parabiosis, **Rossi** (4); Survival and fecundity of spermatozoa in *in vitro* testes at low temperature, **Rostand**; *B.* [*bufo*] *vulgaris*, histological study of tadpole thyroid and hypophysis, **Stahl, Chevalier & Donnet**; *B. bufo* larvae fed on snails in aquarium, effect on development, **Stolk** (11); Statistical survey, Black Sea area, **Stugren & Rădulescu**; Development of Bidder's organ, and genital structures, **Vannini & Ghirardelli**; Range, Holland, **Wijngaarden**; *B.* [*bufo*] *vulgaris formosus*, response of larvae to thiourea, **Iwasawa** (2); Effect on development of I^{131} injected into tadpoles, **Shirai, Nonaka & Kanazawa**; *B.* [*bufo*] *vulgaris japonicus*, histogenesis of intestinal epithelium of larva, **Hoshino**; *B. b. japonicus*, muscular dystrophy as an aberration of the connective tissue, **Stolk** (7); Transplantation experiments with cutaneous fibroma, **Stolk** (8); Inhibitory effect of colchicine on a transplantable cutaneous fibroma, **Stolk** (9); *B.* [*bufo*] *vulgaris japonicus*, "on" and "off" responses in the lower olfactory pathway, **Takagi & Shibuya**; *B. b. spinosus*, in Corfu, identification, distribution and habitat, **Mertens** (3); *B. b. virucosissima*, comparative cytophysiological analysis of reactions of muscle fibres under the influence of urea, **Ushakov & Krolenko.**

Bufo calamita, in Portugal, distribution and ecology, **Almaça**; From Crossac, **Bodin**; Survival and fecundity of spermatozoa in *in vitro* testes at low temperature, **Rostand**; Oxidase activity in heart mitochondria, **Stolk** (1); Diurnal changes in glycogen in the brain, **Stolk** (5); Dependence of brain glycogen distribution on environmental temperature, **Stolk** (6); Ecology in the Guadalquivir swamps, Spain, **Valverde**; Range, Holland, **Wijngaarden.**

Bufo canorus, oviposition and egg morphology, **Savage & Schuierer.**

Bufo ceratophrys from Marahuaca, Venezuela, Andes, Ecuador, **Rivero.**

Bufo chilensis Tschudi, see *B. spinulosus arunco* (Molina), **Cei** (5).

Bufo cinereus, innervation of the kidney, **Waleewa.**

Bufo cognatus, first record from Aguascalientes, Mexico, **Chrapliwy, Williams & Smith**; Chromatographic patterns of parotid gland secretions, **Hunsacker, Alston et al.**; Mechanics of sound production, diagram of inflated vocal pouch, **McAlistair** (2).

Bufo cristiglans **sp. nov.** p. 589, fig. 106; Tingi Hills, Sierra Leone, **Inger & Menzies.**

Bufo debilis insidior, localities in Durango and Chihuahua, Mexico, **Chrapliwy, Williams & Smith.**

Bufo d'orbignyi, chromosome number, **Saez-N. Brum.**

Bufo empusus, col. photo., **Cochran** (2).

Bufo exsul, breeding activity and egg morphology, **Savage & Schuierer.**

Bufo fissipes, table of characteristics, comparison with *B. quechua* and related spp., **Gallardo** (5).

Bufo formosus, photo., **Cochran** (2).

Bufo fowleri, seasonal changes in quantity of fat and glycogen, **Bush**; Col. photo., **Cochran** (2); Electrophoresis of blood proteins, **Dessauer, Fox & Volpe**; Affinities with *B. terrestris*, **Sanders.**

Bufo funereus, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx**; *B. f. funereus*, of Mayombe, Congo. Compared with *B. r. maculatus*, *B. f. upembae*, considered a synonym of *B. f. fuliginatus*, **Laurent** (2).

Bufo granulosus, photo., **Cochran** (2); *B. g. d'orbigny*, absorption and accumulation of vitamin A_1, **Radice** (1); Fluorescent properties of the stratum cribosum of Katschenko, **Radice** (2); *B. g. granulosus*, habits, additional localities and range, Venezuela, **Rivero.**

Bufo guttatus, col. photo., **Cochran** (2); *B. g. guttatus*, Upper Orinoco, Venezuela, **Rivero.**

Bufo hemiophrys, growth, local movements and hibernation in Minnesota, **Breckenridge & Tester**; Only bufonid amphibian in Delta Marsh, Lake Manitoba, Canada, **Tamsitt.**

Bufo inca, table of characteristics, comparison with *B. quechua* and related species, **Gallardo** (5).

Bufo leptoscelis, table of characteristics, comparison with *B. quechua* and related spp., **Gallardo (5)**.

Bufo manicorensis **sp. nov.** p. 1, pl. 1 ; Manicoré, Rio Madeira, Amazonas, Brazil, **Gallardo (5)**.

Bufo marinus, Surinam, photo., notes, **Audretsch (2)** ; Electrical activity of the lymph heart, **Castillo & Sanchez** ; Fine structure of the urinary bladder, **Choi** ; Col. photo., **Cochran (2)** ; Osmotic studies of ovulated eggs, **de Luque & Hunter, A. S. & F. R.** ; Synthesis and electrophoretic distribution of antibodies, **Evans & Horton** ; Blood coagulation studies, **Fantl** ; Scheme for blood coagulation mechanism, **Hackett** ; Blood clotting mechanism, **Hackett & LePage** ; Mitochondria of the small intestine, **Stanbury** ; Effect of different ringer and monocationic solutions on tonus of stomach muscle, **Van Weel** ; *B. m. marinus*, habits, additional localities and range, Venezuela, **Rivero**.

Bufo marmoreus, col. photo., **Cochran (2)**.

Bufo mauritanicus, in Morocco, **Bons**.

Bufo mazatlanensis, from El Dorado, Sinaloa, Mexico ; distribution, size data, **Fugler & Dixon**.

Bufo melanopleura, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx**.

Bufo melanostictus, use for the assay of human chorionic gonadotrophin, **Banik** ; Spermatogenesis in hypophysectomized toads after administration of pituitary extract, **Basu & Mondal (1)** ; Morphological and physiological auxetic growth, **Church (1)** ; Seasonal and lunar variation in reproductive cycle at Bandung, Java, **Church (2)** ; Histochemical study on cytoplasmic constituents of kidney during acute dehydration, **Deb & Mukherji** ; Photos., breeding in captivity, **James**.

Bufo nelsoni, breeding activity and egg morphology, **Savage & Schuierer**.

Bufo ockendeni, table of characteristics, comparison with *B. quechua* and related species, **Gallardo (5)**.

Bufo paracnemis, in Argentina, systematic value of seroprotein electroferograms, **Bertini & Cei** ; Chemical composition of blood, **Lecuona**.

Bufo punctatus, localities in Mexico, first records from Aguascalientes and Jalisco, **Chrapliwy, Williams & Smith** ; Col. photo., **Cochran (2)**.

Bufo pythecodactylus Werner, a synonym of *Bufo m. marinus*, **Rivero**.

Bufo quechua **sp. nov.** p. 4, pl. 3 ; Incachaca, 2,500 m., Cochabamba, Bolivia, **Gallardo (5)**.

Bufo quercicus, photo., Florida, **Carr & Goin** ; Photo, **Cochran (2)** ; Mechanics of sound production, diagram of inflated vocal sac, **McAlistair (2)**.

Bufo regularis, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx** ; Adult morphology of olfactory organs, **Michael** ; From Tchad, Africa, **Wake & Kluge** ; *B. r. maculatus*, from Mayombe, Congo. Comparison with *B. kisoloensis*, *B. funereus* and the savannah form of *B. r. regularis*, **Laurent (2)**.

Bufo speciosus, chromatographic patterns of parotid gland secretions, **Hunsacker, Alston et al.** ; Mechanics of sound production, diags. of larynx and inflated vocal pouch, **McAlistair (2)**.

Bufo spinulosus Wiegmann 1834, should be conserved as a more widely used name in preference to *B. arunco* (Molina 1826) though this latter name has priority, **Cei (5)** ; *B. s. altiperuvianus* **subsp. nov.** p. 2, pl. 2 ; Challapata, Oruro, Bolivia, **Gallardo (5)** ; *B. s. arunco* (Molina), for the central populations of Chile (=*B. chilensis* Tschudi), *B. s. atacamensis* **subsp. nov.** p. 77 ; Rio Huasco, Vallenar ; for the xanthic smooth-skinned populations of the Huasco and Copiapó Rivers and coastal streams of Chile, *B. s. rubropunctatus* (Guichénot), for the southern small valdivian toads of Chile, *B. s. spinulosus* (Wiegmann), for the northern and central mountain populations of Chile, **Cei (5)**.

Bufo sternosignatus, habits, additional localities and range, Venezuela, **Rivero**.

Bufo superciliaris, photo., **Cochran (2)**.

†*Bufo tarloi* **sp. nov.** p. 280, pl. 3, figs. 2, 3 ; pl. 4, pl. 5, fig. 2 ; Pliocene, Weze near Dzialoszyn, Poland, **Młynarski**.

Bufo terrestris, role of pineal system in behaviour, **Adkins & Zweifel** ; In eastern U.S.A. ; evidence for its hybrid origin based upon skeletal characters and geographic distribution ; affinities with *B. americanus*, *B. valliceps* and *B. fowleri* discussed, **Sanders** ; *B. t. charlesmithi*, breeding habits, developmental rate and aggregational behaviour of tadpoles, **Bragg (2)**.

Bufo typhonius, Surinam, photo., **Audretsch (2)** ; *Bufo t. alatus* and *B. t. typhonius* range, localities and habits, Venezuela, **Rivero**.

Bufo ushoranus, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx**.

Bufo valliceps, population variations in Guatemala, **Baylor & Stuart** ; Effect of radiation on natural populations, frequency of mutations, **Blair, W. F. (1)** ; Calling and spawning seasons in Texas, **Blair, W. F. (2)** ; Photo., **Cochran (2)** ; Electrophoresis of blood proteins, **Dessauer, Fox & Volpe** ; Mechanics of sound production, diagrams of larynx and inflated vocal pouch, **McAlistair (2)** ; Skeletal characters and distribution with reference to origin of *B. terrestris*, **Sanders** ; In E. Texas, **Webb & Packard** ; *B. v. wilsoni* **subsp. nov.** p. 195, fig. 2 ; Jacaltenango, Huehuetenango, Guatemala, **Baylor & Stuart**.

Bufo viridis, photo. and general notes, **Anon. (2)** ; Neurosecretion during metamorphosis, **Boitkevich** ; Development and structure of parathyroids ; effect of parathyroidectomy and its possible explanations discussed, **Boschwitz** ; Histology of the telencephalon, **Capanna (2)** ; Photos, 1 col., **Cochran (2)** ; In Steiermark, Austria, **Kepka** *in* **Kepka & Schuster** ; In the Orava River basin, Czechoslovakia, ecology, altitude limit, **Lác (2)** ; From Sharisafa and Mukur, Afghanistan, general notes, **Leviton & Anderson** ; Influence of gibberellins on embryo, **Liotti (1)** ; Morphogenetic functions of nucleus during early development, **Neifakh** ; Antigen studies, **Ranzi, Citterio & Samuelli** ; Neural crest transplantation

from neurulae to belly wall, **Raunich (4)**; Statistical survey, Black Sea area, **Stugren & Rădulescu**; Effect of neurosecretion of preoptic nuclei on metamorphosis, **Voitkevich (1)**; *B. v. viridis*, in Morocco, **Bons**; In Corfu, distribution, **Mertens (3)**.

Bufo vulgaris, see under *B. bufo*.

Bufo woodhousei, photo., **Cochran (2)**; Chromatographic patterns of parotid gland secretions, **Hunsacker, Alston et al.**; Mechanics of sound production, diagram of inflated vocal pouch, **McAlistair (2)**; Variation in South Dakota, **Underhill**; *B. w. fowleri*, new Ohio records, **Adler & Dennis**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Crepidius epioticus Cope 1875, redescribed, validity of genus confirmed, Costa Rica, **Savage & Kluge.**

Dendrophryniscus, references at present retained under ATELOPODIDAE.

Melanophryniscus, references at present retained under BRACHYCEPHALIDAE.

Nectophrynoides occidentalis, habitat, Mt. Nimba, W. Africa, **Lamotte & Roy (2)**.

Oreophrynella, references at present retained under ATELOPODIDAE.

†*Pliobatrachus langhae*, Pliocene, Weze near Dzialoszyn, Poland, urostyle fragments, **Młynarski.**

Pseudobufo subasper, photo., **Cochran (2)**.

Rhinophrynus dorsalis, new Central American records, **Nelson & Hoyt**; Behaviour, feeding habits and growth of tadpoles from Tikal, Guatemala, **Stuart.**

HYBRIDS

Inter- and intragroup genetic compatibility in *Bufo* spp., **Blair, W. F. (3)**.

Bufo ♀ × *Rana temporaria* ♂, incorporation of tritium-labelled thymidine in embryos, **Tencer (2)**.

Bufo bufo × *B. viridis*, and reciprocal cross, antigens during development, **Ranzi, Citterio & Samuelli.**

Bufo valliceps × *B. fowleri*, electrophoresis of blood proteins, **Dessauer, Fox & Volpe.**

Bufo woodhousei × *B. cognatus* and *B. woodhousei* × *B. speciosus*, chromatographic patterns of parotid gland secretions, **Hunsacker, Alston et al.**

CENTROLENIDAE

Key to known species of Ecuador, **Goin (2)**; Key to Venezuelan genera, **Rivero.**

Centrolene geckoideum Espada, from Columbia, description, fig., **Goin (2).**

Cochranella buckleyi Boulenger, from Venezuela, description, figs., **Goin (2)**; Ecology, range and habits, Venezuela, **Rivero**; *C. cochranae* **sp. nov.** p. 97, figs. 1c, 3a; El Topo, Rio Pastaza, Eastern Ecuador, **Goin (2)**; *C. fleishmanni*, ecology, range and habits, Venezuela, **Rivero**; *C. griffithsi* **sp. nov.** p. 99, figs. 1e, 3c; Rio Saloya, Ecuador, *C. ocellifera* Boulenger and *C. parabambae* Boulenger, from Ecuador, description, figs., *C. petersi* **sp. nov.** p. 96, figs. 1f, 3f; Rio Duranga, N.W. Ecuador, **Goin (2).**

DENDROBATIDAE

Key to Venezuelan genera, **Rivero.**

Dendrobates spp., Surinam, general notes, **Audretsch (1)**; *D. auratus*, col. photo., **Cochran (2)**; *D. braccatus*, photo., Surinam, general notes, **Audretsch (1)**; *D. flavopictus*, col. photo., **Cochran (2)**; *D. leucomelas*, range, additional locality records and habits, Venezuela, **Rivero**; *D. trivittatus*, col. photo., **Cochran (2).**

Phyllobates bicolor, col. photo., **Cochran (2)**; *P. bromelicola*, fig. 12; and *P. brunneus*, ecology, habits, range and new locality records, Venezuela, **Rivero.**

Prostherapis spp., range, habits, new locality records, *P. dunni* p. 157, Caracas, *P. shrevei* p. 155, Mt. Marahuaca 5,000–6,000 ft. **spp. nov.**, Venezuela, **Rivero.**

DISCOGLOSSIDAE

Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths.**

†Discoglossidae, from the Miocene of Beni Mellal, Morocco, **Hecht, Hoffstetter & Vergnaud.**

Alytes cisternasi and *A. obstetricans*, in Portugal, distribution and ecology, **Almaça**; *A. obstetricans*, retardation of metamorphosis by "Plégicil", **Bounhiol & Disclos (1)**; Action of thyroxine on winter pause in development of tadpole, **Bounhiol & Disclos (2)**; Study of cavities in the encephalon of tadpoles, **Bounhiol & Rémy**; Embryonic and larval development, **Cambar & Martin**; Photo., **Cochran (2)**; Induction of metamorphosis in the isolated intestine deprived of thyroxine, **Delsol**; Effect of FSH injections on tadpoles, **Delsol & Flatin**; Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths**; Hautes Fagnes, Belgium, **Meeuwen.**

Bombina bombina, photo., **Cochran (2)**; Decreasing frequency in Sweden, **Curry-Lindahl (1)**; Distribution and morphological variation in Czechoslovakia, **Lác (1)**; In Poland, geographic distribution, habitats, classificatory features, **Michałowski (1)**; Classified with the L.T. indicator, **Michałowski (2)**; Analysis of external variation in Roumania, **Stugren & Popovici (2)**; Statistical survey, Black Sea area, **Stugren & Rădulescu**; Effect of neurosecretion of preoptic nucleus on metamorphosis, **Voitkevich (1)**; *B. orientalis*, col. photo., *B. variegata*, photo., **Cochran (2)**; *B. variegata*, disappearance from Limburg, Holland, general notes, terrarium requirements, **Fonteyne (2)**; Habits in captivity and in natural biotopes modified by man, **Heusser**; Distribution and morphological variation in Czechoslovakia, **Lác (1)**; In the Orava River basin, Czechoslovakia, altitude limit, **Lác (2)**; In Poland, geographic distribution, habitats, classificatory

features, **Michałowski (1)**; Classified with the L.T. indicator, **Michałowski (2)**; Analysis of external variation in Roumania, **Stugren & Popovici (2)**; Statistical survey, Black Sea area, **Stugren & Rădulescu.**

†*Discoglossus* sp., maxillare, ilium, urostyles and limb bones, Pliocene, Weze, Poland, **Młynarski.**

Discoglossus nigriventer, from Palestine, relationship to other species in the Mediterranean, **Knoepffler (3)**; *D. pictus*, in Portugal, distribution, systematics and ecology, **Almaça**; Action of adrenaline on oxygen consumption, **Avargues**; Photo., **Cochran (2)**; Mechanics of mouth development in larvae, studied by means of LiCl, **Farfaglio**; Experimental embryology at tail bud stage, **Farinella-Ferruzza**; Morphology, chemical constitution, structure and function of egg involucra, **Ghiara**; Distribution and relationship to other species in the Mediterranean region, **Knoepffler (3)**; ♂ sexual cycle, **Lanza (2)**; Action of serotonin on metamorphosis, **Niaussat, P. & Mme.**; Development of urodele transplants in anuran tadpole hosts, **Rossi (1)**; Importance of ilio-sacral joint in locomotion, **Whiting**; *D. p. pictus*, in Morocco, **Bons**; *D. sardus*, distribution and relationship to other species in the Mediterranean region, **Knoepffler (3).**

HYLIDAE

Keys, diagnoses and synonymies of genera, **Goin (1)**; Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths**; Artificial hybridization between *Hyla*, *Pseudacris* and *Acris*, **Littlejohn (2)**; In New Zealand, key to family and included species, size, colour, distribution, food, enemies, habitat, habits, breeding and tadpoles, **McCann**; Key to Venezuelan genera, **Rivero.**

Acris, inter-generic crosses with *Pseudacris* and *Hyla* spp., **Littlejohn (2)**; *A. crepitans*, calling and spawning seasons in Texas, **Blair, W. F. (2)**; Col. photo., **Cochran (2)**; Colour phenotypes in Texas and Louisiana, **Pyburn (1)**; Inheritance of green vertebral stripe, **Pyburn (2)**; *A. c. blanchardi*, new Ohio records, **Adler & Dennis**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; *A. c. crepitans*, records from eastern New York, **Benton & Smiley**; *A. gryllus dorsalis*, photo., Florida, **Carr & Goin.**

Agalychnis callidryas, col. photo., **Cochran (2)**; *A. dacnicolor*, from El Dorado, Sinaloa, Mexico; distribution, sexual dimorphism, **Fugler & Dixon.**

Anotheca coronata, tadpole, Mexico, **Robinson.**

Aparasphenodon brunoi, photo., **Cochran (2).**

Corythomantis venezolana, habits, range, ecology and new locality records, Venezuela, **Rivero.**

Diaglena reticulata, col. photo., **Cochran (2).**

Dryomelictes Fitzinger 1843, contains *Sphoenohyla* Lutz & Lutz 1938, **Myers & Leviton.**

Flectonotus fissilis and *F. goeldii*, photo., **Cochran (2).**

Gastrotheca [*marsupialis*] *marsupiata* and *G. ovifera*, photo., **Cochran (2)**; *G. ovifera*, ecology, habits, range and new localities in Venezuela, **Rivero**; *G. riobambae*, photo., **Cochran (2)**; *G. williamsoni*, ecology, habits, range and new localities in Venezuela, **Rivero.**

Habrahyla **gen. nov.** p. 62 of Hylidae, type sp. *H. eiselti* **sp. nov.** p. 63, figs. 1 & 2; Brazil, **Goin (3).**

Hyla, intra- and inter-generic crosses with *Pseudacris* and *Acris* spp., **Littlejohn (2)**; List of recent hybrid crosses with U.S. species, **Pyburn & Kennedy**; Range, habits, new locality records in Venezuela, **Rivero.**

Hyla albomarginata, status in Central America, **Fouquette.**

Hyla albopunctata, from Playadito (Corrientes), first record from Argentina, **Cei & Roig.**

Hyla arborea, in Portugal, distribution, systematics and ecology, **Almaça**; One specimen from St. André-des-Eaux, one from Crossac, **Bodin**; photos., 1 col., **Cochran (2)**; Pulmonary eosinophilia, **Dokov**; Effect of extracts of guinea-pig uterus on metamorphosis of tadpoles, **Federici**; Habits in captivity and in natural biotopes modified by man, **Heusser**; Distribution, coloration etc., **Jansen**; In the Orava River basin, Czechoslovakia, altitude limit, **Lác (2)**; Development of urodele transplants in anuran tadpole hosts, **Rossi (1)**; Survival and fecundity of spermatozoa in *in vitro* testes at low temperature, **Rostand**; Statistical survey, Black Sea area, **Stugren & Rădulescu**; Ecology in the Guadalquivir swamps, Spain, **Valverde**; *H. a. arborea*, in Corfu, taxonomy and distribution, **Mertens (3).**

†*Hyla arborea*, from a Palaeolithic rock shelter in Lebanon, **Hooijer.**

Hyla arenicolor, additional localities in Durango, Mexico, **Chrapliwy, Williams & Smith**; Larval development, **Zweifel.**

Hyla aurea, New Zealand, colour photo., general notes **Barwick**; History of introduction to New Zealand, **McCann**; New South Wales, description, geographic variation, ecology, voice, breeding habits, development, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla avivoca, new record in Oklahoma, **Blair & Lindsay**; Col. photo., **Cochran (2)**; Natural hybridization with *H. versicolor* recorded in Alabama shown by call, pigmentation and internarial width relative to body length, **Mecham (2)**; Embryonic and larval development, **Volpe, Wilkins & Dobie**; *H. a. avivoca*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Hyla battersbyi **sp. nov.** p. 138, fig. 11; Caracas, Venezuela, **Rivero.**

Hyla baumgardneri **sp. nov.** p. 123, Casa de Julián, Territorio Amazonas, Venezuela, **Rivero.**

Hyla benitezi **sp. nov.** p. 116, fig. 9; Caño Wanadi, Mt. Marahuaca, Territorio Amazonas, Venezuela, **Rivero.**

Hyla bicolor, New South Wales, description, ecology, voice, distribution, locality records, geographic variation, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla bivocata **sp. nov.** p. 414, figs. 1–3 ; stream above Rayón Mescalapa, Chiapas, Mexico (1,690 m.), **Duellman & Hoyt.**

Hyla booroolongensis **sp. nov.** p. 292, pl. 45, fig. 1 ; text-figs. 59, 60 ; Guy Fawkes Creek, Ebor, New South Wales, **Moore, J. A. (2).**

Hyla caerulea, New Zealand, colour photo., general notes, **Barwick ;** Photos, 1 col., **Cochran (2) ;** History of introduction to New Zealand, **McCann ;** New South Wales, description, ecology, voice, breeding habits, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla chaneque **sp. nov.** p. 1, figs. 1 & 2 ; Rayón Mescalapa, Chiapas, Mexico, 1,690 m., **Duellman (2).**

Hyla chloris, New South Wales, description, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla cinerea, photos, 1 col., **Cochran (2) ;** Development, succession and replacement of teeth, **Goin & Hester ;** Gene exchange with *H. gratiosa*, **Mecham (1) ;** Variation, distribution and ecology in Illinois, photo., **Smith, P. W. ;** *In vivo* assay of melanophore hormone, **Teague & Patton ;** *H. c. cinerea*, photo., Florida, **Carr & Goin.**

Hyla citropa, New South Wales, description, habits, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla crepitans, photo., **Cochran (2).**

Hyla crucifer, photos., 1 col., **Cochran (2) ;** Effectiveness of vocalization as an isolating mechanism, **Martof (1) ;** Gravid ♀ recorded showing ♂ reproductive behaviour in laboratory, **Martof (2) ;** *H. crucifer* and *H. c. bartramiana*, breeding habits, voice, development, ecology, food and feeding, **Roth ;** *H. c. bartramiana*, photo., Florida, **Carr & Goin ;** *H. c. crucifer* variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Hyla dentata, New South Wales, description, habits, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla echinata **sp. nov.**, Vista Hermosa, Oaxaca, Mexico, 1,500 m., p. 349, figs. ; of the *H. tuberculata* group. Note on ecology of collecting area, **Duellman (3).**

Hyla ewingi, New Zealand, colour photo., general notes, **Barwick ;** History of introduction to New Zealand, **McCann ;** *H. ewingi* complex in Australia particularly in New South Wales, description, variation, ecology, voice, breeding habits, development, distribution, locality records, bibliography, photos. and figs., **Moore, J. A. (2).**

Hyla eximia, additional localities in Mexico, first record from Guerrero, **Chrapliwy, Williams & Smith.**

Hyla faber, photos., **Cochran (2) ;** Nest-building, territoriality and mating, photos., **Lutz ;** General note concerned with preservation of animal provinces, **Mertens (2).**

Hyla femoralis, photo., Florida, **Carr & Goin.**

Hyla freycineti, New South Wales, description, ecology, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla genolanensis, col. photo., **Cochran (2).**

Hyla gracilenta, New South Wales, description, habitat, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla gratiosa, photo., Florida, **Carr & Goin ;** Photo., **Cochran (2) ;** *H. gratiosa*, interspecific gene exchange with *H. cinerea*, **Mecham (1).**

Hyla infrafrenata, photo., **Cochran (2).**

Hyla jahni **sp. nov.** p. 113, Escorial, Venezuela, **Rivero.**

Hyla jervisiensis, New South Wales, description, habits, voice, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla labialis, osmotic studies of ovulated eggs, **de Luque & Hunter, A. S. & F. R. ;** Oögenesis in Colombia, **Hunter & Murcia.**

Hyla latopalmata, New South Wales, description, ecology, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla lesueuri, New South Wales, description, ecology, voice, development, distribution, locality records, bibliography, photo. and figs., table of characteristics of *H. lesueuri* complex, **Moore, J. A. (2).**

Hyla loveridgei **sp. nov.** p. 108, fig. 8 ; Pico Culebra, Mt. Duida, 3,000 ft., Territorio Amazonas, Venezuela, **Rivero.**

Hyla marahuaquensis **sp. nov.** p. 118, fig. 10 ; Caño Cajú, Mt. Marahuaca, Territorio Amazonas, Venezuela, **Rivero.**

Hyla maxima, photos., 1 col., **Cochran (2) ;** General note concerned with preservation of animal provinces, **Mertens (2).**

Hyla meridionalis, photo., **Cochran (2).**

Hyla nasuta, New South Wales, description, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla ocularis, photo., Florida, **Carr & Goin.**

Hyla paramica **sp. nov.** p. 112, Escorial, Venezuela, **Rivero.**

Hyla pearsoniana **nom. nov.** p. 168 pro *H. pearsoni* Copland 1960, preoccup. Gaige 1929, **Copland.**

Hyla peroni, New South Wales, description, ecology, voice, breeding habits, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla phyllochroa, New South Wales, description, ecology, voice, breeding habits, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Hyla raddiana, Buenos Aires, general features, coloration, ecology, reproduction and development, **Gallardo (4)**; *H. r. raddiana*, fluorescent properties of the stratum cribosum of Katschenko, **Radice (2)**; Chromosome number, **Saez-N. Brum.**

Hyla regilla, occurrence in the lower Colorado River, Clark Co., Nevada, **Banta (2)**; Photos., 1 col., **Cochran (2)**; Photoreceptors in frontal organ, **Eakin (2)**; Photoreceptors in tadpole stirnorgan, **Eakin & Westfall (1) & (2)**; Photo., **Nedermeijer**; Melanophore-stimulating substance in hypothalamus, **Thurmond.**

Hyla rubella, from Jigalong; note on breeding site, call and distribution, **Lindgren & Main.**

Hyla rubra, observations on the group in Argentina, **Gallardo (3).**

Hyla rufitela **sp. nov.** p. 595, figs. 108, 109; Barro Colorado Island, Canal Zone, Panama, **Fouquette.**

Hyla semiguttata, from San Pedro (Misiones), first record from Argentina, **Cei & Roig.**

Hyla septentrionalis, photo., Florida, **Carr & Goin**; Photos, 1 col., **Cochran (2)**; Populations in S.E. Florida, **King.**

Hyla smithi, from El Dorado, Sinaloa, Mexico; distribution, size data, **Fugler & Dixon.**

Hyla squalirostris, photo., distribution, general study from Argentina, **Gallardo (3).**

Hyla squirella, photos., Florida, **Carr & Goin.**

Hyla strigilata eringiophila **subsp. nov.** p. 147, pl. 1, figs. 1, 2; Bella Vista (prov. Buenos Aires), Argentina, **Gallardo (3).**

Hyla versicolor, photos., 1 col., **Cochran (2)**; Effect of phenylthiourea on iodine binding in tadpoles, **Lynn & Dent (1)**; *H. versicolor*, natural hybridization with *H. avivoca* recorded in Alabama, shown by call, pigmentation and internarial width relative to body length, **Mecham (2)**; *H. v. versicolor*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; From Delta Marsh, Lake Manitoba, Canada, **Tamsitt.**

Hyla vilsoniana meridensis **subsp. nov.** p. 131; Mérida, 1,630 m., Venezuela, **Rivero.**

Hyla wrightorum, larval development, **Zweifel.**

Nototheca pygmaea from the Coastal Range of Venezuela and the Rancho Grande, habits and ecology, **Rivero.**

Phyllomedusa, ecology, habits, range and locality records in Venezuela, **Rivero**; *P. appendiculata* and *P. burmeisteri*, col. photos., **Cochran (2)**; *P. iheringi*, from San Pedro (Misiones), first record from Argentina, **Cei & Roig**; *P. iheringi* Boulenger 1885, pl. 2, figs. 1–4, pl. 3, figs. 5–6; Estancia Bella Vista, Zapicán, Dept. de Lavalleja, Uruguay, **Klappenbach**; *P. rohdei*, photo., **Cochran (2).**

†*Proacris* **gen. nov.** p. 354 of Hylidae, type-sp. *P. mintoni* **sp. nov.** p. 354, fig. 1; Lower Miocene, Gilchrist Co., Florida, **Holman (2).**

Pseudacris, intra- and inter-generic crosses with *Acris* and *Hyla* spp., **Littlejohn (2)**; *P. brachyphona*, new Mississippi state record, **Ferguson (2)**; Effectiveness of call as an isolating mechanism, **Martof (1)**; *P. clarki*, calling and spawning seasons in Texas, **Blair, W. F. (2)**; Mating call discrimination by ♀, **Littlejohn (1)**; *P. nigrita*, photo., **Cochran (2)**; Spinal cord response to hind limb amputation, **Pearson & Kollross**; *P. n. maculata*, from Delta Marsh, Lake Manitoba, Canada, **Tamsitt**; *P. n. nigrita*, photo., Georgia, U.S.A., **Carr & Goin**; *P. ornata*, photo., Florida, **Carr & Goin**; Col. photo., **Cochran (2)**; Effectiveness of call as an isolating mechanism, **Martof (1)**; *P. streckeri*, calling and spawning seasons in Texas, **Blair, W. F. (2)**; *P. s. illinoensis*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; *P. s. streckeri*, in E. Texas, **Webb & Packard**; *P. triseriata*, effectiveness of call as an isolating mechanism, **Martof (1)**; *P. t. feriarum*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; *P. t. triseriata* from Hayes Township, Buena Vista Co., Iowa, **Christiansen**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Pternohyla dentata, first records from Aguascalientes, Mexico, **Chrapliwy, Williams & Smith**; *P. fodiens*, from El Dorado, Sinaloa, Mexico; distribution, size data, **Fugler & Dixon.**

Ptychohyla chamulae p. 354, pl. 25, fig. 2; Rayón Mescalapa, Chiapas, *P. ignicolor* p. 352, pl. 25, fig. 1, Vista Hermosa, Oaxaca **spp. nov.** Mexico, **Duellman (1).**

Smilisca baudini, from El Dorado, Sinaloa, Mexico, distribution, size data, **Fugler & Dixon.**

Sphaenorhynchus Tschudi 1838, type species by monotypy *Hyla lactea* Daudin [=*Hyla aurantiaca* Daudin, *fide* Duméril & Bibron 1841]; synonymy includes *Sphaenorhincus* Duméril & Bibron 1841 (erroneous subsequent spelling of *Sphaenorhynchus* Tschudi), *Dryomelictes* Fitzinger 1843 (type species *Hyla lactea* Daudin, by monotypy), *Dryomelictes* Cope 1865 (type species "*Hyla aurantiaca* auctorum" by o.d.), *Sphoenorhynchus* Lutz & Lutz 1938 (erroneous subsequent spelling of *Sphaenorhynchus* Tschudi), *Sphoenohyla* Lutz & Lutz 1938 (type species *Hyla aurantiaca* Daudin by o.d.; proposed as substitute for *Sphoenorhynchus* Lutz & Lutz, erroneous subsequent spelling of *Sphaenorhynchus* Tschudi) and *Spheenorhynchus* Goin 1957 (erroneous subsequent spelling of *Sphaenorhynchus* Tschudi), **Myers & Leviton.**

Sphoenohyla Lutz & Lutz 1938, synonym of *Dryomelictes* Fitzinger 1843, **Myers & Leviton.**

Trachycephalus siemersi (Mertens) 1937, pls. 1–3, figs. 1–4; of Santa Teresa, Parque Nacional, Dept. de Rocha, Uruguay, **Klappenbach.**

HYBRIDS

List of recent hybrid crosses with U.S. species of *Hyla*, **Pyburn & Kennedy.**

Hyla gratiosa×*H. cinerea*, gene exchange studies, **Mecham (1).**

Hyla versicolor × *H. avivoca*, natural hybridization recorded in Alabama and viable hybrids produced in laboratory, **Mecham (2).**

Hyperoliidae

References at present retained under Rhacophoridae.

Leiopelmidae

Leiopelma in New Zealand, key to species, figs. of hind limbs of *archeyi* and *hochstetteri* showing development of webbing, *L. hamiltoni* also studied, life histories, development and range, **Stephenson, E. M.**; *L. archeyi*, *L. hamiltoni* and *L. hochstetteri*, New Zealand, colour photos, general notes, **Barwick.**

Leptodactylidae

Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths**; Key to Venezuelan genera, **Rivero.**

Adelotus brevis, New South Wales, description, ecology, voice, breeding habits, development, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Amblyphrynus **gen. nov.** p. 543 of Leptodactylidae, type-sp. *A. ingeri* **sp. nov.** p. 543, fig. 103; Gachala, San Isidro, Cundinamarca, Colombia, at 2,350 m., **Cochran & Goin.**

Borborocoetes grayi Bell 1842 = *Eupsophus roseus* Dum. & Bib., *B. kreigi* Müller 1926 = *Eupsophus nodosus* Dum. & Bib., *B. masareyi* Roux 1910 = *Eupsophus roseus* Dum. & Bib., **Grandison (1).**

Cacotus calcaratus Günther 1881 = *Eupsophus roseus* Dum. & Bib., *C. maculatus* Günther 1868 = *Eupsophus nodosus* Dum. & Bib., **Grandison (1).**

[*Calyptocephalella*] *Calyptocephalus gayi*, photo., **Cochran (2)**; *C. gayi* (Dum. & Bib.), systematic relationships on the basis of skeletal characteristics, proposed new subfamily Calyptocephalellinae q.v. to include this genus, **Reig (4).**

Calyptocephalellinae **subfam. nov.** p. 126, of Leptodactylidae, to include *Calyptocephalella* Strand 1928 (Oligocene—Recent, S. America), *Eophractus* Schaeffer 1949 (Eocene, Patagonia), and *Gigantobatrachus* Casamiquela 1959 (Miocene, Patagonia), **Reig (4).**

Calyptocephalus, see under *Calyptocephalella*.

Ceratophrys, in S. America, photos. and notes, **Cornelissen**; *C. calcarata*, photos., **Cochran (2)**; *C. calcarata* and *C. cornuta*, range, habits and new locality records, Venezuela, **Rivero**; *C. ornata*, photos., 1 col., **Cochran (2)**; Fluorescent properties of the stratum cribosum of Katschenko, **Radice (2)**; Skeletal anatomy compared with *Lepidobatrachus*, **Reig (5)**; Chromosome number, **Saez-N. Brum**; *C. stolzmanni*, photo., **Cochran (2)**; *C. varia*, photos., **Cochran (2).**

Crinia haswelli, New South Wales, description, ecology, voice, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2)**; *C. insignifera*, population study on Rottnest Island, Australia; inheritance, fecundity, viability, yearly changes in morph frequency, and population size, **Main**; *C. signifera*, New South Wales, description, ecology, voice, breeding habits, sibling species, embryonic development, distribution, locality records, bibliography, photos. and fig., **Moore, J. A. (2).**

Crossodactylus dispar from San Pedro (Misiones), first record from Argentina, **Cei & Roig**; *C. schmidti* **sp. nov.** p. 34, 4 figs.; Yacú-poí, R. Uruguai 30 km. E. of Puerto Libertad, Misiones, Argentina, **Gallardo (1).**

Cyclorana alboguttatus, New South Wales, description, ecology, voice, development, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2)**; *C. cultripes*, *C. platycephalus*, from Jigalong; note on breeding site, call, distribution and sex dimorphism of breeding pairs, **Lindgren & Main.**

Cystignathus hidalgoi, Jiminez de la Espada, types destroyed. Conspecificity with *Eupsophus taeniatus* and *E. vertebralis* discussed, **Grandison (1).**

Eleutherodactylus, range, habits, ecology and new locality records from Venezuela, **Rivero**; *E. augusti fuscofemora*, from Coahuila, Mexico, **Chrapliwy, Williams & Smith**; *E. a. latrans*, embryology, **Valeti & Jameson**; *E. brachypodius* **sp. nov.** p. 61, Upper Cunucunuma region, Territorio Amazonas; range in Venezuela, **Rivero**; *E. conspicillatus ileamazonicus* **subsp. nov.** p. 63, fig. 2; Temiche, Mt. Marahuaca, 4,050 ft., S. Venezuela, **Rivero**; *E. eileenae*, photo., **Cochran (2)**; *E. martinicensis*, study of development, figs., **Chibon**; *E. nubicola*, embryonic development, photos., **Lynn**; *E. portoricensis*, electrical activity of the lymph heart, **Castillo & Sanchez**; Reaction of *Pseudacris triseriata* to call, **Martof (1)**; *E. orocostalis* **sp. nov.** p. 68, fig. 4; El Junquito, Venezuela, **Rivero**; *E. racenisi* **sp. nov.** p. 78, fig. 7; El Junquito, Venezuela, **Rivero**; *E. ricordi planirostris*, photo, Florida, **Carr & Goin**; Dimorphism, **Volpe (2)**; *E. rozei* **sp. nov.** p. 73, fig. 6; Curucuruma, Edo, Araqua, Venezuela, **Rivero**; *E. sandersoni*, localities in British Honduras, description, **Neill & Allen**; *E. terraebolivaris* p. 58, Rancho Grande, Edo, Aragua, *E. turumiquirensis* p. 57, La Trinidad, Mt. Turumiquire, 5,500 ft., *E. williamsi* p. 72, fig. 5; El Junquito, **spp. nov.**, Venezuela, **Rivero.**

Eupemphix pustulosus ruthveni, habits, range, locality records for Venezuela, **Rivero.**

Eupsophus, key to Chilean species based upon sternal structure and vomerine teeth, **Cei (2)**; Key to Chilean species, examination of the tympanic cavity, secondary sex characters, nomenclatorial changes and clarification of species status, *E. coppingeri* (Günther) text-figs. 1–5, pls. 1–6; from Chile and Argentina; *E. nodosus* (Dum. & Bib.) text-figs. 6–10, pls. 2–3; from Chile, conspecificity with *E. verrucosus* Philippi questioned; *E. roseus* (Dum. & Bib.) text-figs. 11–15, pl. 4, fig. 1; from Chile and Argentine, *E. taeniatus* (Girard) text-figs. 19–22, pl. 5 from Chile and Argentine, *E. vertebralis* **sp. nov.** p. 136, text-figs. 16–18; pl. 4, fig. 2; Valdivia, Chile; description, variation, secondary sex characters, sex dimorphism, ecology and distribution, **Grandison (1).** See also references under *Borborocoetes*, *Cacotus* and *Cystignathus*.

Heleioporus australiacus, New South Wales, description, ecology, voice, breeding habits, development, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Heleophryne purcelli, development of the chondrocranium, **Westhuizen ;** *H. rosei*, photo., **Cochran (2) ;** Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths.**

Kyarranus loveridgei, Queensland, and *K. sphagnicolus*, New South Wales, description, ecology, voice, breeding habits, development, distribution, bibliography, photos. and figs., locality records, **Moore, J. A. (2).**

Lechriodus fletcheri, New South Wales, description, ecology, voice, breeding habits, development, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Lepidobatrachus asper, genetic structure and morphological variations of isolated populations, **Cei (3) ;** Photos., **Cochran (2) ;** Skeletal anatomy compared with *Ceratophrys*, **Reig (5).**

Leptodactylus, range, habits and locality records from Venezuela, **Rivero ;** *L. albilabris*, respiratory metabolism of tadpoles, **Candelas, Ortiz, Vásquez & Félix ;** Reproduction and development, **Dent (1) ;** *L. chaquensis*, electrophoretic analysis of serum, cf. *L. ocellatus*, **Cei & Bertini (1) & (2) ;** *L. labialis*, first records from British Honduras, ecology and habits, *L. melanonotus*, call and breeding habits, **Neill & Allen ;** *L. occidentalis*, from El Dorado, Sinaloa, Mexico ; distribution ; retained as a distinct species and not synonymous with *L. melanonotus*, **Fugler & Dixon ;** *L. ocellatus*, electrophoretic analysis of serum, comparison with *L. chaquensis*, **Cei & Bertini (1) & (2) ;** Blood pressure recordings after drug injections, **Ladosky ;** Larvae, effect of keeping in various concentrations of 2-3-5-trimethyl-1-4-benzoquinone, **Vaz-Ferreira ;** *L. o. ocellatus*, fluorescent properties of stratum cribosum of Katschenko, **Radice (2) ;** *L. pentadactylus* col. photo., **Cochran (2).**

Limnodynastes, general taxonomic remarks on Australian spp., *L. dorsalis*, *L. fletcheri*, *L. ornatus*, *L. peroni* and *L. salmini*, New South Wales, description, ecology, breeding habits, development, distribution, locality records, variation, bibliography, photo. and figs., **Moore, J. A. (2) ;** *L. spenceri*, from Jigalong ; note on breeding site, call and distribution, also sex dimorphism, **Lindgren & Main ;** *L. tasmaniensis*, New South Wales, description, ecology, voice, breeding habits, development, distribution, locality records, bibliography, photos. and figs., **Moore, J. A. (2).**

Mixophyes fasciolatus, photo., Queensland, Australia, **Cogger ;** In New South Wales, description, ecology, development, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

Neobatrachus pictus, New South Wales, description, ecology, voice, breeding habits, development, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2) ;** *N. sutor*, from Jigalong ; note on breeding site, call, distribution, **Lindgren & Main.**

Notaden bennetti, col. photo., **Cochran (2).**

Odontophrynus americanus, fluorescent properties of the stratum cribosum of Katschenko, **Radice (2) ;** Chromosome number, **Saez-N. Brum.**

Paludicola fischeri, notes on range and synonymy, **Rivero.**

Physalaemus gracilis, larvae, effect of keeping in various concentrations of 2-3-5-trimethyl-1-4-benzoquinone, **Vaz-Ferreira ;** *P. riograndensis*, redescription from Argentina, **Cei & Roig.**

Pleurodema brachyops, range, habits and additional localities, Venezuela, **Rivero ;** *P. nebulosa*, influence of testosterone propionate on gonad differentiation, **Pisanó & Pizarro.**

Pseudopaludicola ameghini, from Ituzaingó (Corrientes), new record for Argentina, **Cei & Roig ;** *P. falcipes*, fluorescent properties of the stratum cribosum of Katschenko, **Radice (2) ;** *P. pusilla*, range, habits and additional localities, Venezuela, **Rivero.**

Pseudophryne australis, *P. bibroni* and *P. coriacea*, New South Wales, description, ecology, voice, breeding habits, development, distribution, locality records, bibliography, photos. and figs., **Moore, J. A. (2) ;** *P. corroboree*, photo., **Cochran (2) ;** *P. corroboree* and *P. dendyi*, New South Wales, description, ecology, voice, distribution, locality records, bibliography, photos. and fig., **Moore, J. A. (2).**

Rhinoderma, references at present retained under RHINODERMATIDAE.

Syrrhophus leprus, first record in British Honduras, description. **Neill & Allen ;** *S. marnockii*, photo., **Cochran (2).**

Uperoleia marmorata, New South Wales, description, variation, ecology, voice, breeding habits, development, distribution, locality records, bibliography, photo. and figs., **Moore, J. A. (2).**

MICROHYLIDAE

Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths ;** Key to Venezuelan genera, **Rivero.**

Asterophrys wilhelmana, egg laying habits in New Guinea, **Tyler (2).**

Breviceps adspersus and *B. gibbosus*, col. photos., *B. mossambicus*, photo., **Cochran (2).**

Calluella guttulata, form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths.**

Cophixalus parkeri, egg laying habits in New Guinea ; *C. shellyi* vernacular name in New Guinea, **Tyler (2).**

Elachistocleis ovalis, range, additional locality records, habits, Venezuela, **Rivero.**

Gastrophryne carolinensis carolinensis, variation, distribution and ecology in Illinois, photo., **Smith, P. W. ;** *G. mazatlanensis*, distribution in Northwestern Mexico and South-western U.S.A., **Wake ;** *G. olivacea mazatlanensis*, from El Dorado, Sinaloa, Mexico ; distribution, morphology, **Fugler & Dixon ;** *G. o. olivacea*, additional localities in Mexico, first record from San Luis Potosí, **Chrapliwy, Williams & Smith ;** See also references under *Microhyla*.

Hypopachus cuneus, col. photo., **Cochran (2)**.

Kaloula pulchra, photo., **Cochran (2)**.

Microhyla carolinensis, photo., **Cochran (2)**; *M. c. carolinensis*, photo., Carolina, **Carr & Goin**; *M. olivacea*, calling and spawning seasons in Texas, **Blair, W. F. (2)**; Reproductive potential, **Henderson**; Minimum developmental temperature tolerance, **Hubbs & Armstrong**; See also references under *Gastrophryne*.

Otophryne robusta, range, additional locality records, habits, Venezuela, **Rivero.**

Notobatrachidae

†*Notobatrachus degiustoi*, morphology, phylogeny and general study, Jurassic, Patagonia, **Casamiquela (2).**

Pelobatidae

Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths.**

Megophrys spp. from Southern China and Tonkin, comparison of body proportions in males of 5 species, *M. brachykolos* **sp. nov.** p. 533, fig. 101; The Peak, Hong Kong Island, **Inger & Romer**; *M. nasuta*, photo., **Cochran (2).**

Pelobates cultripes, in Portugal, distribution and ecology, **Almaça**; Survival and fecundity of spermatozoa in *in vitro* testes at low temperature, **Rostand**; Embryonic development, evolution and homologies of sensory lines and dermal bones of the cheek, **Stensiö**; Ecology in the Guadalquivir swamps, Spain, **Valverde**; *P. fuscus*, neurosecretion during metamorphosis, **Boitkevich**; Col. photo., **Cochran (2)**; In Steiermark, Austria, **Kepka** *in* **Kepka & Schuster**; Statistical survey, Black Sea area, **Stugren & Rădulescu**; Effect of neurosecretion of preoptic nuclei on metamorphosis, **Voitkevich (1)**; *P. syriacus*, statistical survey, Black Sea area, **Stugren & Rădulescu.**

Pelodytes punctatus, in Portugal, distribution and ecology, **Almaça**; From St.-Joachim and Trignac, **Bodin**; Distribution of polysaccharides in cleaving eggs, **Sentein (1).**

Pipidae

Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths**; General notes, aquarium requirements, **Phillips**; Key to Venezuelan genera, **Rivero.**

†Pipidae from the Miocene of Beni Mellal, Morocco, **Hecht, Hoffstetter & Vergnaud.**

Hymenochirus boettgeri, embryonic development, evolution and homologies of sensory lines and dermal bones of the cheek, **Stensiö**; *H. boulengeri*, general notes, aquarium requirements, breeding, photos., **Haas**; Breeding in captivity, photos., **Yuhas.**

Pipa parva, from Venezuela, Maracaibo basin and Falcón region; N.E. Colombia, **Rivero**; *P. pipa*, photos. 1 col., **Cochran (2)**; Reproductive habits, brooding care, egg development and emergence of young, photos., **Rabb**; Eastern Venezuela, Trinidad and the Guianas to Matto Grosso; Colombia to Peru and probably Bolivia, **Rivero.**

†*Saltenia* **gen. nov.** p. 4 of Aglossa (?) genotype *S. ibañezi* **sp. nov.** p. 4, pl. 1, figs. 1, 2; Alemanía (Dto. de Viñas, Salta prov.), N.W. Argentina, Lower Cretaceous, **Reig (1).**

†*Shelania* **gen. nov.** p. 17 of Pipidae, type-species *S. pascuali* **sp. nov.** p. 18, fig. 1; Eocene, Laguna del Hunco, Chubut province, Argentina, **Casamiquela (1).**

Xenopus, the pineal gland and body lightening in larvae, **Bagnara (1)**; Larvae, chemically limited retardation of growth, in spite of the influence of acid phosphatase, in tail regeneration, **Hahn, Niehus, Scholl & Lehmann**; Thyreostatic effect of $KClO_4$, **Pflugfelder**; Effect of 5-fluorodeoxyuridine on embryos, **Tencer (1)**; Electron microscopical observations on larval tissues, **Weber**; *X. fraseri*, from Mayombe, Congo. Distinguished from *X. tropicalis*, **Laurent (2)**; *X. laevis*, onset of pineal and hypophysial regulation of melanophores, **Bagnara (2)**; Ultrastructural mechanisms of gastrulation and neurulation, **Balinsky, B. I.**; Mode of excretion of ammonia and urea, **Balinsky & Baldwin**; Transfer of primordial germ-cells, **Blackler & Fischberg**; Morphogenetic effects of lipoic acid on embryos, **Brachet**; Ageing, **Brocas & Verzár**; Photos., **Cochran (2)**; Existence of temporal specificity in reaggregation of mid-gastrula cells, **Curtis**; Effect of ATP on late gastrulae explants, **Deuchar (1)**; Increased ^{32}P exchange between pyrophosphate and adenosine triphosphate in the presence of added L-leucine in embryos, **Deuchar (2)**; Relationship with *Marsupiobdella africana* in the Kromboom River, Cape Province, S. Africa, **Dick**; Sources and nature of salivary secretions in adult, **Francis**; Lens regeneration from cornea, **Freeman & Overton**; Egg involucra cf. *Discoglossus pictus*, **Ghiara**; Response of melanophores to catecholamines, **Graham**; Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths**; Treatment with 4-methyl-2-thiouracil causing intense degranulation of the islets of Langerhans, **Guardabassi**; Nuclear transplantation between 2 subspecies, **Gurdon**; Differential behaviour, **Haubrich (1)**; Hierarchical behaviour, **Haubrich (2)**; Changes in serum proteins during metamorphosis, **Herner & Frieden (1)**; Cell degeneration in ventral horn of larva, **Hughes, A**; Effect of limb ablation on neurones, **Hughes & Lewis**; Dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx**; Development of regeneration blastemas implanted into the brain, **Jordan**; Origin, importance and fate of melanocytes in cerebral fluid, **Komnick**; Effect of food on speed of larval development, **Kucias**; Regeneration of transected nervous connections in the brain, **Kwiatkowski**; Bile pigment excretions, **Lester & Schmid**; Effects of axon severance in cholinergic neurones of larva, **Lewis & Hughes**; Development of peripheral nerves, **Peters, A.**; Blood vessels of developing spinal cord, **Sims (1)**; Treatment with phenylthiourea, **Sims (2)**; Effect of brain injuries on development, **Srebro**; Experiment to discover whether artificially induced "desiccation" affected subcommissural organ, **Steyn**; Effect of morphogenetic inhibitor on water balance of embryo, **Tuft (1)**; Role of H_2O-regulating mechanisms in morphogenesis, **Tuft (2)**; Egg laying habitat, **Van Dijk**; Alterations in connective tissue and intestine produced by hypervitaminosis A, **Weissmann (2)**; Importance of ilio-sacral joint in locomotion, **Whiting**; Modification of Benz's method

for histochemical localization of cathepsins in tail, **Wróblewski**; Catheptic activity in the tail during development, metamorphosis and regeneration, **Wróblewski & Grzybek**; *X. tropicalis*, from Mayombe, Congo. Distinguished from *X. fraseri*, **Laurent** (2).

PSEUDIDAE

Key to Venezuelan genera, **Rivero.**

Lysapsus limellus, diagnostic features of subspecies tabled, *L. limellus bolivianus* **subsp. nov.** p. 127; Reyes, Bolivia, *L. l. laevis*, from Brazil, description, colour, dimensions and distribution, and *L. l. limellus* from Paraguay, *L. mantidactylus* (Cope) from Uruguay, external and skeletal characters, dimensions and distribution; synonymy includes *Pseudis mantidactyla* Cope 1862, **Gallardo** (8).

Pseudis mantidactyla Cope, see *Lysapsus mantidactylus* (Cope), **Gallardo** (8); *P. paradoxa* Surinam, photo., **Audretsch** (2); Photos., **Cochran** (2); *P. paradoxus*, external morphology, skeleton, diagnostic features and interrelationships of subspecies, figs., **Gallardo** (8); Range, habits and locality records, Venezuela, **Rivero**; *P. paradoxa*, chromosome number, **Saez-N. Brum**; *P. paradoxus bolbodactylus*, from Brazil, description, dimensions, variation and distribution, *P. p. caribensis* **subsp. nov.** p. 116, fig. 4; Mayaro Bay, Trinidad, B.W.I., *P. p. fuscus*, from Brazil, description, dimensions and distribution, *P. p. occidentalis* **subsp. nov.** p. 122, fig. 4; El Pailón, Bolivia, *P. p. paradoxus*, from British Guiana, description, dimensions and distribution, *P. p. platensis* **subsp. nov.** p. 120, fig. 4; Colonia Nueva Italia, Dept. Villeta, Paraguay, **Gallardo** (8).

RANIDAE

Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths**; Key to Venezuelan genera, **Rivero.**

†Ranidae from the Miocene of Beni Mellal, Morocco, **Hecht, Hoffstetter & Vergnaud.**

Abroscaphus Laurent, replaced in synonymy of *Arthroleptis* A. Smith, **Laurent** (1).

Anhydrophryne rattrayi Hewitt, taxonomic status, osteological characters, **Laurent** (1).

Arthroleptella Hewitt, taxonomic status of genera, osteological analysis and phylogeny of *lawrencei* Loveridge 1954, *hewitti hewitti* Fitz Simons 1947, and *h. minor* Fitz Simons 1947, **Laurent** (1).

Arthroleptinae, osteological comparison with Phrynobatrachinae, phylogenetic relationships and generic nomenclature, key to genera, **Laurent** (1).

Arthroleptis adolfi-friederici leleupi **subsp. nov.** p. 323, Bagilo, Uluguru Mts., Tanganyika Territory, **Skelton-Bourgeois** (1); *A. stenodactylus*, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx**; *A. wahlbergi* A. Smith 1849, key to taxonomic status of genus and included species, **Laurent** (1); *A. xenodactyloides*, from Chirinda forest, S. Rhodesia, **Bruggen.**

Astylosterninae, of Mayombe, Congo. Key to *T. robustus*, *A. diadematus* and *S. gabonicus* (q.v.), **Laurent** (2).

Astylosternus diadematus, first record from Congo; comparison with Cameroon specimens, note on variation in proportions, **Laurent** (2).

Aubria subsigillata, from Stanley Pool, Congo; tadpoles, **Skelton-Bourgeois** (2).

Cacosterninae, considered diphyletic, phylogenetic study of genera, **Laurent** (1).

Cardioglossa leucomystax, description of tadpole, development and biometrics, **Lamotte.**

Conraua robusta, generic type; note on validity of specific name, **Perret.**

Dendrobates, references at present retained under DENDROBATIDAE.

Dicroglossus occipitalis, from Stanley Pool, Congo; dental formula, measurements, coloration, **Skelton-Bourgeois** (2).

Hemisus marmoratus, photo., **Cochran** (2); Photo., ecology in Albert and Kagera National Parks, Africa, **Curry-Lindahl** (2); From Tchad, Africa, **Wake & Kluge.**

Hylarana acutirostris, specific name preoccupied in *Rana*; replaced by *parkeriana* Mertens. Cameroon race becomes *H. parkeriana longipes* Perret, **Perret**; *H. albolabris*, from Stanley Pool, Congo; dental formula, measurements, coloration, **Skelton-Bourgeois** (2).

Phrynobatrachinae, osteological comparison with Arthroleptinae, phylogenetic relationships and taxonomy, **Laurent** (1).

Phrynobatrachus alticola **sp. nov.** p. 574, figs. 3 & 4; Mt. Nimba region, Guinea, W. Africa, **Guibé & Lamotte** (2); *P. anotis* and *P. eryptotis*, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx**; *P. guineensis* **sp. nov.** p. 571, figs. 1 & 2; Mont Tonkoui, Ivory Coast, **Guibé & Lamotte** (2); *P. gutturosus*, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx**; *P. natalensis*, ultrastructural mechanisms of gastrulation and neurulation, **Balinsky, B. I.**; Photo., **Cochran** (2); *P. natalensis*, *P. parvulus* and *P. perpalmatus*, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx.**

Phyllobates, references at present retained under DENDROBATIDAE.

Platymantis boulengeri, col. photo., **Cochran** (2).

Prostherapis, references at present retained under DENDROBATIDAE.

Ptychadena abyssinica Peters 1881, Africa, description, biometrics, distribution, comparison with *P. oxyrhynchus*; synonymy includes *P. gondokorensis* Werner 1907, *P. aberae* Ahl 1923, *P. oxyrhynchus oxyrhynchus* Lov. and *P. o. migiurtina* Scort. 1933,

Guibé & Lamotte (1); *P. maccarthyensis*, W. Africa, larval structure, development and metamorphosis, biometrics, figs., **Lamotte & Perret (1)**; From Tchad, Africa, morphology, **Wake & Kluge**; *P. mascareniensis*, larval structure, development and metamorphosis, biometrics, Cameroons and Egypt, **Lamotte & Perret (1)**; *P. m. mascareniensis*, photo., ecology in Albert and Kagera National Parks, Africa, **Curry-Lindahl (2)**; *P. oxyrhynchus* Smith 1849, Africa, description, biometrics, distribution, comparison with *P. abyssinica*; synonymy includes *P. gribinguiensis* Angel, and *P. oxyrhynchus gribinguiensis* Loveridge, **Guibé & Lamotte (1)**; *P. oxyrhyncha*, from Tchad, Africa, morphology, **Wake & Kluge**; *P. perreti*, larval structure, development and metamorphosis, biometrics, W. Africa, **Lamotte & Perret (1)**; *P. submascareniensis*, larval development and metamorphosis descd. and fig'd.; phalangeal and dental formulae. Diagnosis of adult; vomerine teeth absent, **Lamotte, Dzieduszycka & Lauwarier**; *P. tournieri*, diagnosis of species, fig. Larval development and metamorphosis descd., fig'd. Phalangeal formula; dental formula, **Lamotte, Dzieduszycka & Lauwarier**; *P. trinodis*, adult and larva descd., figd. Larval development and metamorphosis; note on dental formula, **Lamotte, Dzieduszycka & Lauwarier**; From Tchad, Africa, morphology, **Wake & Kluge**; See also references under *Rana*.

Rana agilis, from swamps between Pierre-Fendue and Bréca, **Bodin.**

Rana areolata areolata, from E. Texas, **Webb & Packard**; *R. a. circulosa*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Rana arvalis, from R. Elbe lowlands, Germany, **Garms**; Hautes Fagnes, Belgium, **Meeuwen**; Morphogenetic study of cerebellar nuclei, **Rüdeberg**; Induction of ovulation out of breeding season, **Štefanová & Romanovský**; Larvae fed on snails in aquarium, effect on development, **Stolk (11)**; Kétyi Nyir, Siebenbürgen, biology, **Stugren & Kohl**; Statistical survey, Black Sea area, **Stugren & Rădulescu**; Actively acquired tolerance to skin heterografts, **Vyazov & Sorokina**; *R. a. wolterstorffi* Szászrégen, Siebenbürgen, biology, **Stugren & Kohl.**

Rana aurora aurora and *R. a. cascadae* shown, on the basis of experimental crosses, to be reproductively isolated and incapable of interbreeding; concluded that the two are separate species and should be designated as *Rana aurora* Baird & Girard, and *R. cascadae* Slater, **Porter.**

Rana blythi, photo., **Cochran (2).**

Rana boylii, histology of pancreatic islet, **Miller.**

Rana cancrivora, osmotic and ionic regulation studies, **Gordon, Schmidt-Nielsen & Kelly.**

Rana capito, photo., Florida, **Carr & Goin.**

Rana cascadae Slater, shown to be a distinct species on the basis of experimental crosses with *R. aurora*, **Porter.**

Rana catesbeiana, calling and spawning seasons in Texas, **Blair, W. F. (2)**; Photo., Florida, **Carr & Goin**; Photos., **Cochran (2)**; Effect of sodium fluoroacetate on blood glucose levels, **Cole**; Extremity vein endothelial nuclei, **Donahue, Connor & Manner**; Relationship of O_2 consumption to body weight and starvation, **Fanslow**; Comparative activity of thyroxin and its analogues in tadpoles, **Frieden & Westmark**; Biomechanics of jumping at prey, photos., **Gans (4)**; Regeneration and stability of lateral line organs, **Helff**; Changes in serum proteins during metamorphosis, **Herner & Frieden (1)**; Histocompatibility genetics of isolated populations, **Hildemann & Haas**; Host to a new *Ophiotaenia*, **Jones, Cheng and Gillespie**; Release of Ca-45 from, nerves during electrical activity, **Koketsu & Miyamoto (1)**; Bile pigment excretions in larvae, **Lester & Schmid**; Effect of chemicals on tadpole respiration, **Lewis & Frieden**; Isolated retina used to show mechanism of light adaptation, **Lipetz**; Construction of ileostomies and colostomies in adult, **Massaro**; Localization of acid and alkaline phosphatase in pituitary, **Ortman & Fallon**; Effect of thyroxine on protein synthesis in the tadpole, **Paik & Cohen**; Influence of dietary factors and hormones on respiratory metabolism in larvae and adults, **Pryor & Tipton**; Cover photo., climbing an electric fence, **Schmid, F. C.**; Oxyntic cells in the gastric glands, **Sedar**; Embryology of larval corium, **Shimozawa**; Bodies of Eberth in tadpole skin, **Singer & Salpeter**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; Influence of parathyroids on bone, **Talmage & Yoshida**; Action of oxytoxin and temperature on glomerular filtrate, **Uranga**; Total blood volume determination by radioisotope methods, **Wilson, Hansard & Cole**; Preparation of monolayer cell cultures from various tissues, **Wolf, Quimby, Pyle & Dexter**; Blood sugar studies, **Wright, P. A.**

Rana chalconota Schlegel, taxonomic status, comparison with *R. labialis* Schlegel; measurements given; evidence to support Boulenger's view (1920) that *labialis* is not a species distinct from *chalconota*; note on function of poisonous granular patches, **Liem.**

Rana chensinensis, postembryonic multiplication of muscle fibres, **Lobyntsev.**

Rana christyi, photo., **Cochran (2).**

Rana clamata, embryonic development, evolution and homologies of sensory lines and dermal bones of the cheek, **Stensiö.**

Rana clamitans, photo., Florida, **Carr & Goin**; Photo., **Cochran (2)**; Dimensionless characteristics of duration of development, **Dettlaf, T. A. & A. A. (1) & (2)**; Comparative activity of thyroxin and its analogues in tadpoles, **Frieden & Westmark**; Absorption of amino acids in the intestine, **Gagnon**; Changes in serum proteins during metamorphosis, **Herner & Frieden (1)**; Construction of ileostomies and colostomies in adult, **Massaro**; Bodies of Eberth in tadpole skin, **Singer & Salpeter**; Caught in mousetraps near Ithaca, New York; stomach contents and habitats, **Whitaker**; *R. c. melanota*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Rana curtipes, metamorphosis observations, **Lobo.**

Rana cyanophlyctis, action of mammalian hormones on hypophysectomized specimens, **Ramaswami & Lakshman.**

Rana dalmatina, morphogenesis of the digestive apparatus, **Albert & Cambar**; Origin of formative material for ♀ genital region, **Dechambe**; Different reactions of pronephros to thyroid hormone, **Dechambe & Cambar**; New record in C. Europe, **Fritzsche & Obst**; ♂ sexual cycle, **Lanza (2)**; In Corfu, synonymy, identification and distribution, **Mertens (3)**; Induction of ovulation out of breeding season, **Štefanová & Romanovský**; Statistical survey, Black Sea area, **Stugren & Rădulescu.**

Rana esculenta, in Portugal, distribution, systematics and ecology, **Almaça**; Effect of skin secretions on muscle, **Bartha, Faiszt & Jendrassik**; From the Grande-Brière region, **Bodin**; Spinal cord potential generation by cutaneous nerve stimulation, **Bravo & Fernandez de Molina**; Histology of the optic tectum, **Capanna (1)**; Ultrastructure of resting and contracted striated muscle, **Carlsen, Knappeis & Buchthal**; Action of intermedin on thyroid function, **Čehović**; Photos., **Cochran (2)**; Effect of penicillin and streptomycin on growth and development of tadpoles, **Dąbrowski**; Physiological and biochemical properties of dehydrated muscles and heart, **Dydyńska**; Electrophysiology of muscle fibres, **Etzensperger (1) & (2)**; Growth of pronephric system quantitatively analysed, **Fox, H. (1)**; Use of males in new test for early pregnancy diagnosis, **Frassineti & Lanza**; Histology and histochemistry of macrothyrocytes, **Gabe**; From R. Elbe lowlands, Germany, **Garms**; Egg involucra cf. *Discoglossus pictus*, **Ghiara**; Role of semi-circular canals, **Gribenski**; Transplantation of *R. pipiens* nuclei into enucleated eggs, and their early development, **Hennen**; Habits in captivity and in natural habitats modified by man, **Heusser**; Effect of lysine-vasotoxin on oxytoxin, competitive inhibition of antidiuresis, **Jard & Morel**; Effect of temperature on O_2 linkage in blood, **Krüger**; In the Orava River basin, Czechoslovakia, ecology, measurements, altitude limit. **Lác (2)**; ♂ sexual cycle, **Lanza (2)**; Yolk formation in oocytes, **Lanzavecchia**; Effect of powdered pineal gland on tadpole development, **Ławiński**; Influence of gibberellins on embryo, **Liotti (1)**; Effect of chlorotetracycline on larval tail regeneration, **Manelli (1)**; Effects of low temperatures on eggs and embryos, **Manelli (2)**; Stages in development, figs., **Manelli & Margaritora**; Effect of loss of blastomere material on development of egg, **Milaire**; Neurohypophysial hormones, **Morel, Maetz, Acher et al.**; Morphogenetic functions of nucleus during early development, **Neifakh**; Influence of Ca on K-contracture of "slow" and "fast" skeletal muscle fibres, **Pauschinger & Brecht**; Influence of the atmosphere enriched in CO_2 and O_2 on skin capillaries, **Poczopko**; Isolation of steroids with phenolic and ketonic fractions from sexually active frogs, **Raunich (1)**; Morphogenetic potential of the lateral mesoderm in tail bud stages, **Raunich (3)**; Neural crest transplantation from neurulae to belly wall, **Raunich (4)**; Differentiation of explanted cephalic neural folds from neurulae, **Raunich (5)**; Development of neural fold material after homoplastic transplantation into the orbit of differentiated tadpoles, **Raunich (6)**; Presence of p-hydroxybenzylacetone in extracts, **Raunich (7)**; Effect of testosterone on early embryology, **Rodriguez-López (1)**; Effect of 2-4-diclorophenoxyacetic acid and its Na salt on the motility of spermatozoa, **Rodriguez-López (2)**; Study of nervous system development by transplantation experiments, **Rossi (3)**; Nervous regulation during parabiosis, **Rossi (4) & (5)**; Survival and fecundity of spermatozoa in *in vitro* testes at low temperature, **Rostand**; Homing movements, **Sanden-Guja**; Induction of ovulation out of breeding season, **Štefanová & Romanovský**; Larvae fed on snails in aquarium, effect on development, **Stolk (11)**; Living in same habitat as *R. ridibunda* at edge of L. Razelm, Roumania, **Stugren & Popovici (1)**; Statistical survey, Black Sea area, **Stugren & Rădulescu**; Fibroarchitectonics of the cerebral glia, **Syzdłowska**; Role as second intermediate host in cycle of a digenic trematode, **Timon-David**; Effect of darkness and cold on thyroid gland, **Toutain**; Effect of neurosecretion of preoptic nuclei on metamorphosis, **Voitkevich (1)**; Innervation of kidney, **Waleewa**; Range, Holland, **Wijngaarden**; Observations on colony at Black Pond, Esher, Surrey, **Yalden & Morris.**

Rana frontalis, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx.**

Rana fuscigula, photo., **Cochran (2)**; Dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx**; *R. f. nutti*, photo., ecology in Kagera and Albert National Parks, Africa, **Curry-Lindahl (2).**

Rana goliath, from Spanish Guinea, photo., **Cuspinera.**

Rana graeca, photo., **Cochran (2)**; Statistical survey, Black Sea area, **Stugren & Rădulescu.**

Rana grandisonae, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx.**

Rana grisea, eaten in New Guinea, **Tyler (2).**

Rana grylio, photo., Florida, **Carr & Goin**; Enzyme changes and nucleic acid metabolism during metamorphosis, **Finamore & Frieden**; Comparative activity of thyroxine and its analogues in tadpoles, **Frieden & Westmark**; Changes in serum proteins during metamorphosis, **Herner & Frieden (1)**; Changes in nature of red cell proteins during metamorphosis, **Herner & Frieden (2)**; Effect of chemicals on tadpole respiration, **Lewis & Frieden**; Bodies of Eberth in tadpole skin, **Singer & Salpeter.**

Rana heckscheri, photo., Florida, **Carr & Goin**; Changes in serum proteins during metamorphosis, **Herner & Frieden (1)**; Effect of chemicals on tadpole respiration, **Lewis & Frieden.**

Rana hexadactyla, haemoglobin content and sedimentation rate in blood, **Cherian, Vasu & Krishnaswamy.**

Rana hosii, col. photo., **Cochran (2).**

Rana iberica, in Portugal, distribution and ecology, **Almaça.**

Rana japonica, effect of Ca reduction on electrical activities of muscle membrane, **Hisada & Miyamoto**; Polarized light microscopy of single muscle fibre, **Washio, Kakiuchi & Tamasige**; Electrophysiological study on effects of anaesthetics on isolated muscle fibres, **Yamaguchi**; Induction of gonad masculinization by pituitary grafts in heat-treated hypophysectomized larvae, **Yoshikura.**

Rana labialis Schlegel, further evidence to support Boulenger's view (1920) that *labialis* is not a species distinct from *chalconota*, **Liem.**

Rana mascareniensis, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx.**

Rana melanota, col. photo., **Cochran (2).**

Rana moeruensis, photo., **Cochran (2).**

Rana montezumae, from Jalisco, Mexico, **Chrapliwy, Williams & Smith.**

Rana nigromaculata, histology of seasonal changes of testis and thumb pad, **Iwasawa & Asai**; Histochemistry of kidney, **Okada**; Effects of metabolic inhibitors and narcotics on ^{32}P-outflux from retina, **Oki & Honjo**; Relationship between mitochondria and yolk platelets in embryonic cells, **Sung**; "On" and "off" responses in the lower olfactory pathway, **Takagi & Shibuya**; *R. n. brevipoda* and *R. n. nigromaculata*, nuclear transplantation experiments, **Sambuichi**; *R. n. nigromaculata*, topography of presumptive rudiments in endoderm of neurula, **Tahara & Nakamura.**

Rana occipitalis, from Tchad, Africa, **Wake & Kluge.**

Rana oxyrhyncha, photo., **Cochran (2).**

Rana palmipes, range, additional locality records, habits, Venezuela, **Rivero.**

Rana palustris, col. photo., **Cochran (2)**; Dimensionless characteristics of duration of development, **Dettlaf, T. A. & A. A. (1) & (2)**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Rana perezii, photo., **Cochran (2).**

Rana pipiens, role of pineal system in behaviour, **Adkins & Zweifel**; Cultivation of monolayer cultures of renal cells, **Auclair (1) & (2)**; Natural incidence of renal adenocarcinoma in Vermont frogs, **Auclair (3)**; Guanophore and melanophore stimulation by MSH peptides, **Bagnara (3)**; Serological analysis of Lucké renal adenocarcinoma, **Barch**; Differentiation *in vitro* of presumptive epidermis cells of gastrula, **Barth, L. G. & L. J.**; Calling and spawning seasons in Texas, **Blair, W. F. (2)**; Skin gland development during treatment with thyroxine, **Bovbjerg & Kollross**; Electrical activity of the lymph heart, **Castillo & Sanchez**; Col. photo., **Cochran (2)**; Deoxyribonucleases in embryo and adult, **Coleman**; Effect of Paroidin on Ca and P levels, **Cortelyou**; Blood and urine Ca changes in parathyroidectomized specimens, **Cortelyou, Hibner-Owerko & Mulroy**; Dimensionless characteristics of duration of development, **Dettlaf, T. A. & A. A. (1) & (2)**; Inhibitory control of neural differentiation in explants of gastrula ectoderm, **Dial**; Germ-plasm in relation to nuclear transplantation, **Di Berardino (1)**; Karyotype and its stability during embryonic differentiation, **Di Berardino (2)**; Extremity vein endothelial nuclei, **Donahue, Connor & Manner**; Standing potentials in the eye, **Dzendolet (1)**; Electroretinogram study, **Dzendolet (2)**; Fatigue in phasic and tonic muscle fibres, **Eberstein & Sandow**; Inhibition of pars intermedia by brain, **Etkin, Levitt & Masur**; Relationship of O_2 consumption to body weight and starvation, **Fanslow**; Absorption and utilization of Fe^{59}, **Fehrn**; Properties of nucleoli isolated from mature ovarian eggs including determination of nucleotide composition of RNA, **Finamore**; Electrical excitability of isolated skin, **Finkelstein**; Effect of ethionine on development of muscular response in embryo, **Flickinger**; Anatomy and development of racial hybrids, **Fowler**; Braction on excitation–contraction coupling in skeletal muscle, **Frank**; Comparative activity of thyroxin and its analogues in tadpoles, **Frieden & Westmark**; From El Dorado, Sinaloa, Mexico; distribution, **Fugler & Dixon**; Brief account of new features of cilium structure, **Gibbons**; Physiological processes associated with sperm emission, **Giltz**; Regeneration of the gut, **Goodchild**; Fine structure of desmosomes in the cytoplasm of mesothelial cells, **Hama (1)**; Endothelial myofilaments, **Hama (2)**; Homograft reaction studies using C^{14} labelled glycine, **Hartung**; Homograft studies of developing limb bud area, **Hartung & Laflamme**; Effect of ryanodine on muscle, **Haslett & Jenden**; Capacity of nuclei to promote development in their own cytoplasm after replicating in *Rana esculenta* cytoplasm, **Hennen**; Cholinesterase activity of the optic tectum after unilateral eye removal, **Hess**; Morphogenesis of cardiac jelly, **Jaffee**; Viability in aqueous $CuSO_4$ solutions, **Kaplan & Yoh**; Metamorphic changes in skin basement lamella of larvae exposed to thyroxine, **Kemp (1)**; Replacement of larval basement lamella by adult-type basement membrane in skin during metamorphosis, **Kemp (2)**; Respiratory enzyme changes during embryogenesis, **Lang & Grant**; Differentiation of epidermis, **Leeson & Threadgold**; Bile pigment excretions, **Lester & Schmid**; Membrane activity of chronically denervated muscle, **Levine**; Measurement of melanophoretic activity, **Long & Guillemin**; Intraspecific nuclear transplantation, **McKinnell**; Lens extract tested with chick lens antiserum during a study of lens proteins, **Maisel & Langman**; Venous histology, in particular the perivascular melanophores, **Manner, Donahue & Conner**; Postsynaptic effects of hemicholinium No. 3 at neuromuscular junction, **Martin & Orkand**; Construction of ileostomies and colostomies in adult, **Massaro**; Anatomy and physiology of vision, **Maturana, Lettvin, McCulloch & Pitts**; Structure of the sarcolemma of skeletal muscle fibres, **Mauro & Adams**; Physiological importance of the thyroid in winter, **Meisner**; Fluorochroming of supravital nerve preparations, **Mielcarek**; Induction of limb regeneration by xenoplastic adrenal transplants from *Diemictylus viridescens*, **Mizell, M.**; Seasonal changes in blood glucose, liver glycogen, gastric mucosal glycogen and gonad, fat body and pancreas weights, **Mizell, S.**; Technique for microscopic bioassay of melatonin, **Mori & Lerner**; Retention of urea by kidney slices *in vitro*, **O'Dell & Schmidt-Nielsen**; Localization of acid and alkaline phosphatase in pituitary, **Ortman & Fallon**; Histology, histochemistry and electron microscopy of thumb pads, **Parakkal & Ellis**; Influence of dietary factors and hormones on respiratory metabolism in larvae and adults, **Pryor & Tipton**; Fate of implanted embryos in eyes, **Rafferty, N. S. (1)**; Relationship between pronephros and haploid syndrome in larva, **Rafferty, N. S. (2)**; Homologous implantations of embryos into adults, **Rafferty, N. S. (3)**; High incidences of transmissible kidney tumours in uninoculated laboratory maintained specimens, **Rafferty, K. A., Jr. & N. S.**; Production of growth-inhibiting products by developing tadpoles,

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Rana platyrrhina, morphological development and chemical differentiation during embryogenesis at low temperatures, **Løvtrup.**

Rana porosissima, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx.**

Rana ridibunda, innervation of heart, **Ábrahám** ; Radiologic study of ventricular circulation, **Alexa & Boingeanu** ; Pulmonary eosinophilia, **Dokov** ; Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths** ; Electronic analysis of narcotic's action on nerve, **Il'inskii & Tertyshnik** ; Morpho-physiology of the ventricular loculi, **Jitariu & Alexa** (1) ; Photomecanographic recordings of the ventricular wall movements, **Jitariu & Alexa** (2) ; Effect of temperature on inactivation of liver cholinesterase, **Kusakina** ; Morphogenetic functions of nucleus during early development, **Neifakh** ; Effects of temperature under natural and experimental conditions, **Pashkova & Sudarev** ; Fine vascularization of spinal cord, **Rakeewa** ; Spermiogenesis, **Serra & Vicente** ; Induction of ovulation out of breeding season, **Štefanová & Romanovský** ; Living in same habitat as *R. esculenta* at edge of L. Razelm, Roumania, **Stugren & Popovici** (1) ; Statistical survey, Black Sea area, **Stugren & Rădulescu** ; Effect of continuous light stimulus removal on rhythmic activity of eye, **Val'tsev** ; Ecology in the Guadalquivir swamps, Spain, **Valverde** ; Feeding habits around Iassy, Roumania, stomach analyses, **Vancea, Mindou & Simionescu** ; Normal glycemia and production of hyperglycemia, **Vlădescu** ; *R. r. ridibunda*, in Corfu, distribution, **Mertens** (3).

Rana septentrionalis, study of intestinal Protozoa, **Camara & Buttrey.**

Rana subpunctata, photo., **Cochran** (2).

Rana subsigillata, col. photo., **Cochran** (2).

Rana sylvatica, from Scioto Co., Ohio, breeding populations, **Adler & Dennis** ; ♂ urinogenital system, **Basu** ; Growth rates in L. Itasca region of northern Minnesota, **Bellis** ; Photos., 1 col., **Cochran** (2) ; Dimensionless characteristics of duration of development, **Dettlaf, T. A. & A. A.** (1) & (2) ; Habitat selection and activity, escape behaviour and general ecology of populations, **Heatwole** (1) ; From Delta Marsh, Lake Manitoba, Canada, **Tamsitt** ; *R. s. cantabrigensis* and *R. s. sylvatica*, variation, distribution and ecology in Illinois, photo., **Smith, P. W.**

Rana temporaria, reproductive cycle in mountain lakes in S. France, **Angelier** ; Effect of skin secretions on muscle, **Bartha, Faiszt & Jendrassik** ; Probably in the Grande-Brière region but never positively identified, **Bodin** ; Myelinization of the peripheral nervous system, **Borovyagin** ; Morphogenetic effects of lipoic acid on embryos, **Brachet** ; Biochemistry of eggs treated with β-mercaptoethanol, **Brachet, Cape, Decroly et al.** ; Ultrastructure of resting and contracted striated muscle at different stretches, **Carlsen, Knappeis & Buchthal** ; Photos, **Cochran** (2) ; Effect of penicillin and streptomycin on growth and development of tadpoles, **Dąbrowski** ; Light absorbing properties of visual pigments before and after extraction from visual cells, **Dartnall** ; Pulmonary eosinophilia, **Dokov** ; Role of Ca and Zn in responses of sartorius muscle, **Edman & Grieve** ; Effect of thyroid stimulation on the thyroid cells of tadpoles, **Fabre & Marescaux** (1) & (2) ; Sources and nature of salivary secretions in tadpole and adult, **Francis** ; Histology and histochemistry of macrothyrocytes, **Gabe** ; From R. Elbe lowlands, Germany, **Garms** ; Effect of metabolic inhibitors on relations between nucleus and cytoplasm in oocyte, **Geuskens** ; Early stages in adaptation to higher temperatures, **Grainger** ; Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths** ; Interneuronal synapses of urinary bladder, **Grigor'eva** ; Examination of mitochondria in the kidney cells by phase contrast refractometry, **Grzycki** ; Movement of muscle K, **Harris & Sjodin** ; In Dorset, field notes, **Hawthorne** ; Effect of non-mammalian pituitary extracts on water relations, **Heller & Pickering** ; Habits in captivity and in natural biotopes modified by man, **Heusser** ; Albinism, col. photos. **Husson & Chaudonneret** ; Electrotonic analysis of narcotics action on nerve, **Il'inskii & Tertyshnik** ; Effects of thyroidectomy, hypophysectomy and thiourea treatment on gonad development in larvæ, **Iwasawa** (6) ; Recovery of electrical activity in optic tectum during optic nerve regeneration, **Jacobson, M.** ; Seasonal migrations, hibernation, mating season and development of ♀ reproductive organs, during yearly cycle, **Juszczyk** ;

Studies on fertilization of eggs, **Katagiri**; Terminations of afferent nerve fibre in muscle spindle, **Katz, B.**; End plate drug action in twitch fibres, **Katz & Miledi**; Action of reserpine on tadpole metamorphosis, **Kehl, Dumont, Czyba & Germain**; Functional purpose of tonic myons, **Koloss**; Effect of temperature on inactivation of liver cholinesterase, **Kusakina**; In the Orava River basin, Czechoslovakia, ecology, measurements, altitude limit, **Lác (2)**; ♂ sexual cycle, **Lanza (2)**; Effect of powdered pineal gland on tadpole development, **Lawiński**; Inhibition of egg cell division by mercaptoethanol and dithiodiglycol, **Limbosch-Rolin & Brachet**; *Intra vitam* observation of interneuronic connections in the urinary bladder, **Majorov**; Effect of loss of blastomere material on development of egg, **Milaire**; Sarcotubular system of skeletal muscle, **Muscatello, Andersson-Cedergren, Azzone & Decken**; Morphogenetic functions of nucleus during early development, **Neifakh**; Optico-vegetative regulatory mechanisms of the diencephalon, **Oksche**; Location of succinic dehydrogenase in retina and effect of light on its activity, **Ostrovsky (1)**; Acetylcholinesterase activity in retina, **Ostrovsky (2)**; Influence of Ca on K-contracture of "slow" and "fast" skeletal muscle fibres, **Pauschinger & Brecht**; Histological study of effect of $KClO_4$ on various organs, **Pflugfelder**; Failure of 2-thio-5-methyl-cytosine to counteract LiCl in embryos, **Rogers**; Survival and fecundity of spermatozoa in *in vitro* testes at low temperature, **Rostand**; Action of tetanus toxin, **Rowson**; Effect of P_{32} on growth and differentiation of tadpole, **Russu, Holan, Rosenberg & Diacu**; Induction of ovulation out of breeding season, **Štefanová & Romanovský**; Oxidase activity in heart mitochondria, **Stolk (1)**; Statistical survey, Black Sea area, **Stugren & Rădulescu**; Action of d-tubocurarine chloride on net flux of water across isolated skin, **Tercafs & Schoffeniels**; Effect of continuous light stimulus removal on rhythmic activity of eye, **Val'tsev**; Effect of testosterone on spermatogenesis, **van Oordt & Basu**; Recording of electroretinogram with small doses of X-rays, **Veninga**; Importance of ilio-sacral joint in locomotion, **Whiting**; Range, Holland, **Wijngaarden**; *R. t. ornativentris*, inhibition of gonad development in thyroidectomized larvae, **Iwasawa (5)**; *R. t. temporaria*, tadpoles as test of hypophysial growth-promoting activity of adult mice, **Enemar**; Ecology and life history, parasites and predators, food, hibernation and migration, influence of external factors on spawning date and breeding behaviour, **Savage, R. M.**; Polarized light microscopy of single muscle fibre, **Washio, Kakiuchi & Tamasige.**

†*Rana temporaria*, from Pleistocene deposits, Upton Warren, Worcestershire, **Coope, Shotton & Strachan.**

Rana tigrina, spermatogenesis, **Basu & Mondal (2)**; Photo., **Cochran (2)**; Osmoregulatory mechanisms, **Gordon, Schmidt-Nielsen & Kelly**; Mucinogenesis in goblet cells with reference to morphology and histochemistry of cytoplasmic inclusions, **Kanwar (1) & (2)**; In Portuguese India, morphology, coloration, ecology and distribution, **Manaças**; Two cases of anomaly of external jugular veins, **Talesara.**

Rana tuberculosa, photo., **Cochran (2).**

Rana uzungwensis, dominant foods, seasonal and altitudinal variation in diet and species-prey size relations in the Congo, **Inger & Marx.**

Rana virgatipes, photo., **Cochran (2).**

Rana viridis, effect of metabolic inhibitors on relations between nucleus and cytoplasm in oocyte, **Geuskens.**

Rana wageri, ♂ call, eggs and tadpoles, photos., **Wager (3).**

Rana wolterstorffi, photo., **Cochran (2).**

†*Rana yüshensis* **sp. nov.** pp. 340 (344); pl. 1, figs. 1, 2; Lower Pliocene, Changta'un, Wusiang, Shansi, China, **Liu.**

Schoutedenella Witte (Laurent 1954) removed from synonymy of *Arthroleptis* A. Smith, **Laurent (1).**

Scotobleps gabonicus, first record from the Congo, **Laurent (2).**

Trichobatrachus robustus, of Mayombe, Congo. Note on ecology and on colour in life, **Laurent (2).**

Hybrids

Rana a. areolata × *R. p. pipiens*, artificial hybridization, **McAlister (1).**

Rana nigromaculata brevipoda ♀ × *R. n. nigromaculata* ♂, study of roles of nucleus and cytoplasm in development, **Sambuichi**; *R. n. nigromaculata* × *R. n. brevipoda*, occurrence of natural hybrid near Okayama, Japan, **Moriya.**

Rana sylvatica × *R. pipiens*, cellular basis of hybrid inviability, **Moore, J. A. (1).**

Rana temporaria ♂ × *Bufo* ♀, incorporation of tritium-labelled thymidine in embryos, **Tencer (2).**

Rhacophoridae

Form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths.**

Afrixalus spp., from Africa in Berlin Museum, taxonomic notes, **Laurent (3)**; *A. spinifrons*, photo., from South Africa, **Wager (1)**; *A. wittei*, photo., **Cochran (2).**

Cryptothylax gresshoffi, from the Congo, figs. of tadpoles, coloration, measurements, **Skelton-Bourgeois (2).**

Hylambates maculatus, col. photo., **Cochran (2)**; Photo., from South Africa, **Wager (1).**

Hyperolius spp. from Africa, in Berlin Museum, taxonomic notes, **Laurent (3)**; *H. argentovittis*, col. photo., **Cochran (2)**; *H. horstockii*, habits and vivarium requirements, **Bustard**; Photo., **Cochran (2)**; *H. h. horstockii*, on Cape Peninsula, coloration, habits, photos., **Visser**; *H. lateralis*, photo., ecology in Albert and Kagera National Parks, Africa, **Curry-Lindahl (2)**; *H. pusillus*, egg laying habitat, **Van Dijk**; *H. quinquevittatus*, col. photo., **Cochran (2)**; *H. tuberilinguis*, photo., from South Africa, **Wager (1)**; *H. viridiflavus bayoni*, photo., ecology in Albert and Kagera National Parks, Africa, **Curry-Lindahl (2)**; *H. wermuthi* **sp. nov.** p. 71; Bossou, Guatemala, **Laurent (3).**

Kassina senegalensis, photo., **Cochran (2)**; Dominant foods and species-prey size relations in the Congo, **Inger & Marx**; Ecology and habits, egg-laying, tadpoles, figs., **Wager (2)**.

Leptopelis anchietae, Cameroons, *L. aubryi* Guinea and Ivory Coast, larval structure, development and metamorphosis, larval proportions, figs., diagnosis of species, adult and larva described, **Lamotte & Perret (2)**; *L. bocagei*, dominant foods and species-prey size relations in the Congo, **Inger & Marx**; *L. calcaratus*, larval structure, development and metamorphosis, larval proportions, Cameroons, figs., diagnosis of species, adult and larva described, **Lamotte & Perret (2)**; *L. karissimbensis*, photo., ecology in Albert and Kagera National Parks, Africa, **Curry-Lindahl (2)**; *L. lebeaui*, photo., **Cochran (2)**; *L. ocellatus* Cameroons and *L. viridis* W. Africa, larval structure, development and metamorphosis, larval proportions, figs., diagnosis of species, adult and larva described, **Lamotte & Perret (2)**.

Mantella aurantiaca, col. photo., **Cochran (2)**.

Philautus gryllus, form and function of larval fore-gut with reference to the *manicotto glandulare*, **Griffiths.**

Polypedetes, see under *Rhacophorus*.

[*Rhacophorus*] *Polypedates buergeri*, effect of mammalian hypophysial extract on gonad development, **Iwasawa (3)**; *Rhacophorus leucomystax*, foam nests, **Stolk (10)**; *R. otilophus*, col. photo., *R. reinwardtii* and *R. schlegelii*, photos., **Cochran (2)**; *R. schlegelii*, effect of steroid hormones on larval gonads, **Iwasawa (1)**; *R. s. arborea*, effect of mammalian hypophysial extracts on gonad development, **Iwasawa (3)**.

RHINODERMATIDAE

Rhinoderma darwinii, photo., **Cochran (2)**; Parental care, photo., **Lynn.**

SCAPHIOPODIDAE

Scaphiopus, theory of origin deduced mainly by study of habits, **Bragg (1)**; *S. bombifrons*, rate of larval development and metamorphosis, **Voss**; *S. couchii*, col. photo., **Cochran (2)**; Distribution in Texas, includes *Spea laticeps* (?), **Chrapliwy & Malnate**; First record from Durango, Mexico, **Chrapliwy, Williams & Smith**; First record from Isla Cerralvo in the Gulf of California, **Etheridge**; Minimum developmental temperature tolerance, **Hubbs & Armstrong**; *S. holbrooki*, photos., eggs and adult, **Cochran (2)**; Variation, distribution and ecology in Illinois, photo., **Smith, P. W.**; *S. h. holbrooki*, photo., Florida, **Carr & Goin**; *S. h. hurteri*, breeding habits, developmental rate and aggregational behaviour of tadpoles, **Bragg (2)**.

Spea bombifrons, from Chihuahua, Mexico, **Chrapliwy, Williams & Smith**; *S. hammondi*, distribution in Texas, *S. laticeps*, systematics, relegation to synonymy of *Scaphiopus couchi* Baird, 1854, **Chrapliwy & Malnate.**

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